The Builder.

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"Bearroc," Berkshire.—Mr. John Belcher, F.R.I.B.A., Architect ..... *Double-Page Ink-Photo.*
The Middlesex Hospital Convalescent Home, Clacton-on-Sea.—Mr. Keith D. Young, F.R.I.B.A., Architect ..... *Double-Page Photo-Litho.*

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Carved Woodwork in Spanish Churches.

ONE of the most remarkable features connected with the study of architecture during the last quarter of a century has been the way in which the attention of architects, draughtsmen, and archæologists has been attracted to Spain. Any one who is old enough to remember the views prevalent concerning Spanish architecture some thirty-five years back is almost unable to understand how it is that we knew so little of the magnificent Romanesque and Gothic works of every period which abound in that land. There was a sort of idea that, beyond the Moorish work, the value of which was somewhat exaggerated, and the amount immensely exaggerated, Spain contained nothing except one or two very rank Gothic churches of no particular value for study, except to the painter, and a vast quantity of very late and utterly worthless Renaissance. When, at a lecture given during the fifties at the South Kensington Museum by Cardinal Wiseman, who was by birth a Spaniard, the Cardinal spoke in glowing terms of the superb cathedrals of his native land, which he said were equal to any in Europe, the statement was received with a smile of incredulity, and a very eminent architect said he could only account for this statement by supposing that the Cardinal saw these gaudy Spanish churches when he was a child, and had not visited Spain since he had become a man.

Looking at an old copy of one of our daily newspapers, which, by the way, only dated some ten or twelve years back, we noticed that, in an article upon Spain, the writer assured his readers that the only architecture worth anything in the country was the work of the Moors, and that all that was done by the Christians was to whitewash and spoil the beautiful works left by the Moors; "in fact," said he, "the Christians in Spain have whitewashed everything they could lay their hands on." This statement, like so many others of the same description, is absolutely false; for it so happens that a greater number of the Spanish cathedrals retain their internal surface, undisfigured by paint or whitewash, or still worse, by scraping, than those of any other country in Europe. How many of our English cathedrals, for instance, retain their internal surface, and have escaped the painter and the scraper? Westminster Abbey has, fortunately, and is, for that reason, the most beautiful interior in England.* Probably for the beautiful effect of stone surface-work no cathedrals in Europe surpass Barcelona, Avila, Gerona, Palma, and Tarragona. We know now pretty well the noble designs of the great Spanish churches and cathedrals, and those who have not visited Spain have only to read Mr. Street's book to get an idea of their planning and general disposition. Of course, a great deal has been written and drawn since Mr. Street's book was published in 1865, and now we are beginning to study these buildings more in detail. Excellent works upon Spanish metal-work, such as Reja's, &c., and upon the beautiful early Renaissance work of the country, are now to hand.

The church furniture in Spain offers a well-nigh inexhaustible fund for the study of sumptuous design and delicate execution. The woodwork alone, of which we give a few sketches, would furnish material for a library of books and a museum of drawings, so many of the Spanish churches, not the cathedrals alone, retain their Mediæval reredoses or "Retables" of almost every date from the thirteenth to the sixteenth century.

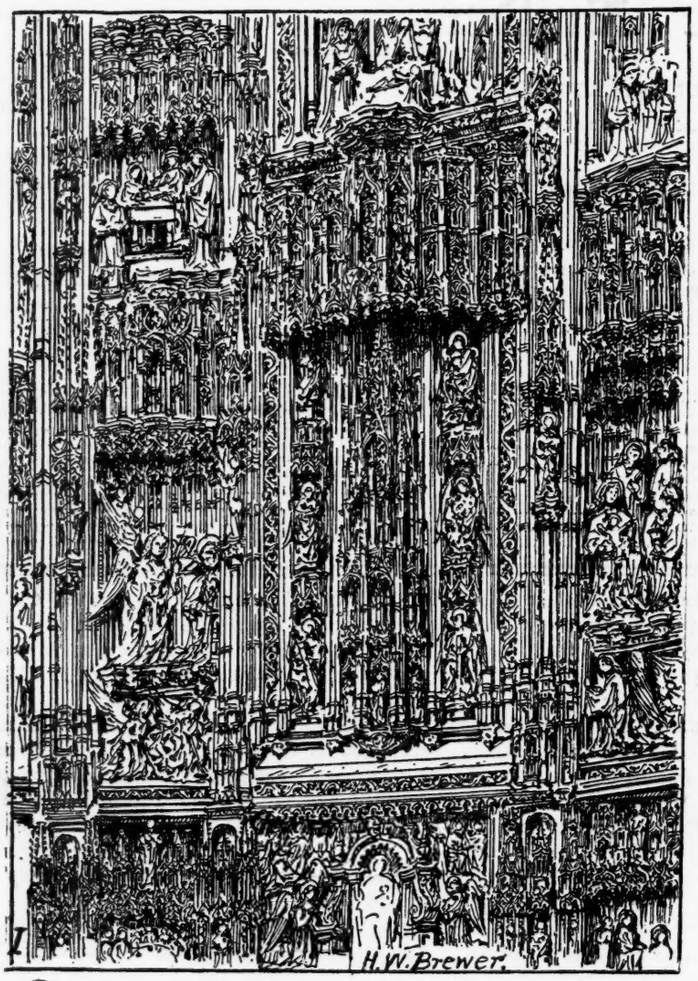
The gorgeous examples of Toledo and Seville are probably the richest specimens of Mediæval woodwork in existence. So intricate and elaborate are they that it is difficult even to draw a portion of them in freehand, and one can scarcely conceive a man inventing their extraordinary complications and intricacies of plan and section. The Toledo example dates from the year 1500, and not only does it expand to the whole width of the choir but rises, with its crowning figures, to the full height of the vaulting of that very lofty church. These Spanish retables do not bear much resemblance to the German or Flemish triptychs, but are treated more after the manner of our great English altar-screens, more especially those of Christ Church, Hampshire, All Souls' and New Colleges at Oxford, though, of course, the English examples are in stone and the Spanish ones in wood. At first sight the great retable at Toledo suggests German work, but a careful examination of its canopies will show that it is quite as much English or Flemish as it is German. The great square-headed canopies with the strong-marked horizontal line at the top are very English in character, though it must be acknowledged that the tabernacle certainly does look as if it had been inspired by German work.

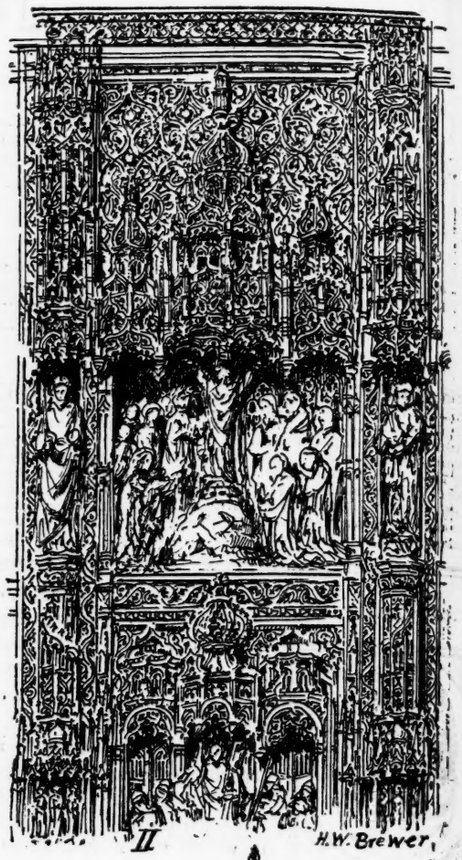
The great reredos of Seville (of which we give a portion) looks later work than that of Toledo, but, in point of fact, it is really earlier, as it was executed between the years 1482 and 1497, the sculptors' names being Danchart and Bernardo Ortega. Danchart sounds like a German name, but the character of the work and its general design are not German. Some of the canopies and the foliated patterns filling in the background of the panels bear a strong resemblance to portions of the stalls in Henry VII. Chapel, Westminster, and the Sprynge Chantry, at Lavenham.

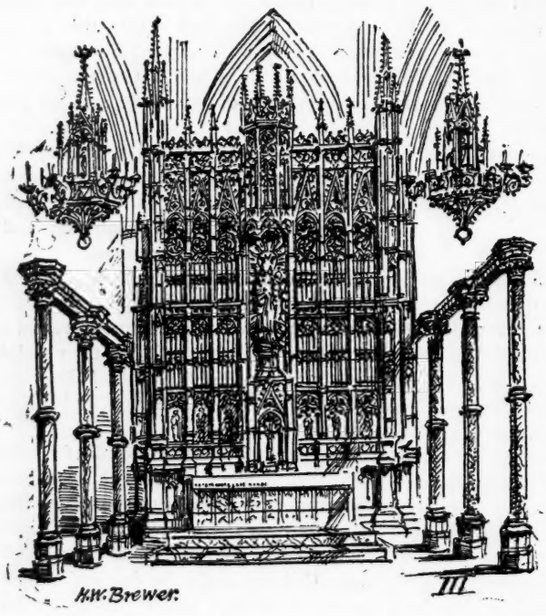
The cathedrals of Avila, Tarragona, Salamanca (old cathedral) also contain magnificent retables, which depend rather more for their effect upon painting than sculpture, and an extremely beautiful Renaissance example is to be seen in the Capilla Real, at Granada.

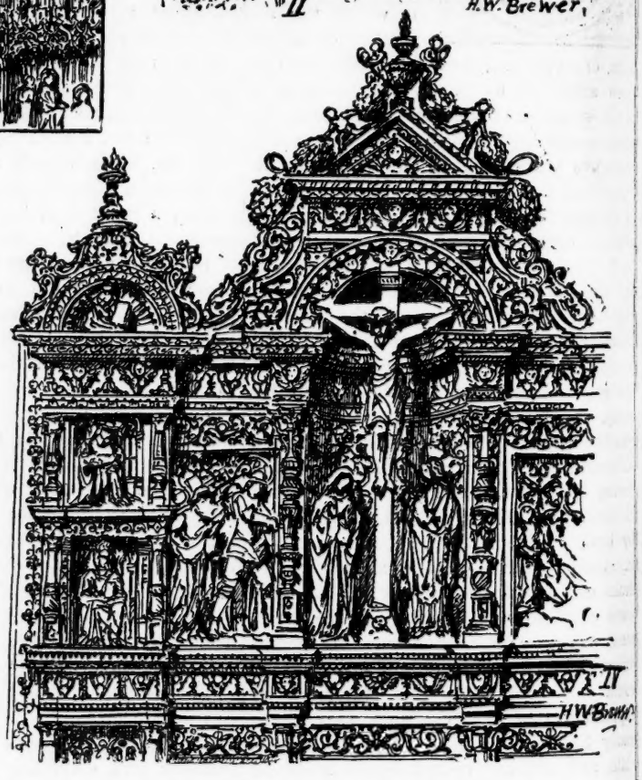
Another very different kind of reredos is to be seen in some Spanish churches; it consists almost entirely of open-pierced tracery. Examples are to be found in the cathedral at Barcelona and the great church at Manresa. Unfortunately, the decoration upon the former of these is either entirely modern or so much restored as to leave one in some doubt how far it has been tampered with. Although it does not come strictly within the province of this article, we may call attention to the three slender columns bearing up a slight cornice on either side of the altar at Manresa. These are of marble, and probably originally supported the "rideau," which we find so frequently mentioned in ancient documents. From Viollet-le-Duc it would appear that they were universal in France, and they were certainly used in England, but we fancy they were not common in Germany; possibly they would have stood in the way of the doors of the triptych when it was open. Triptych altar-pieces are,

* The nave of Lichfield looks as if it had not been tampered with, but we are not quite sure about it.







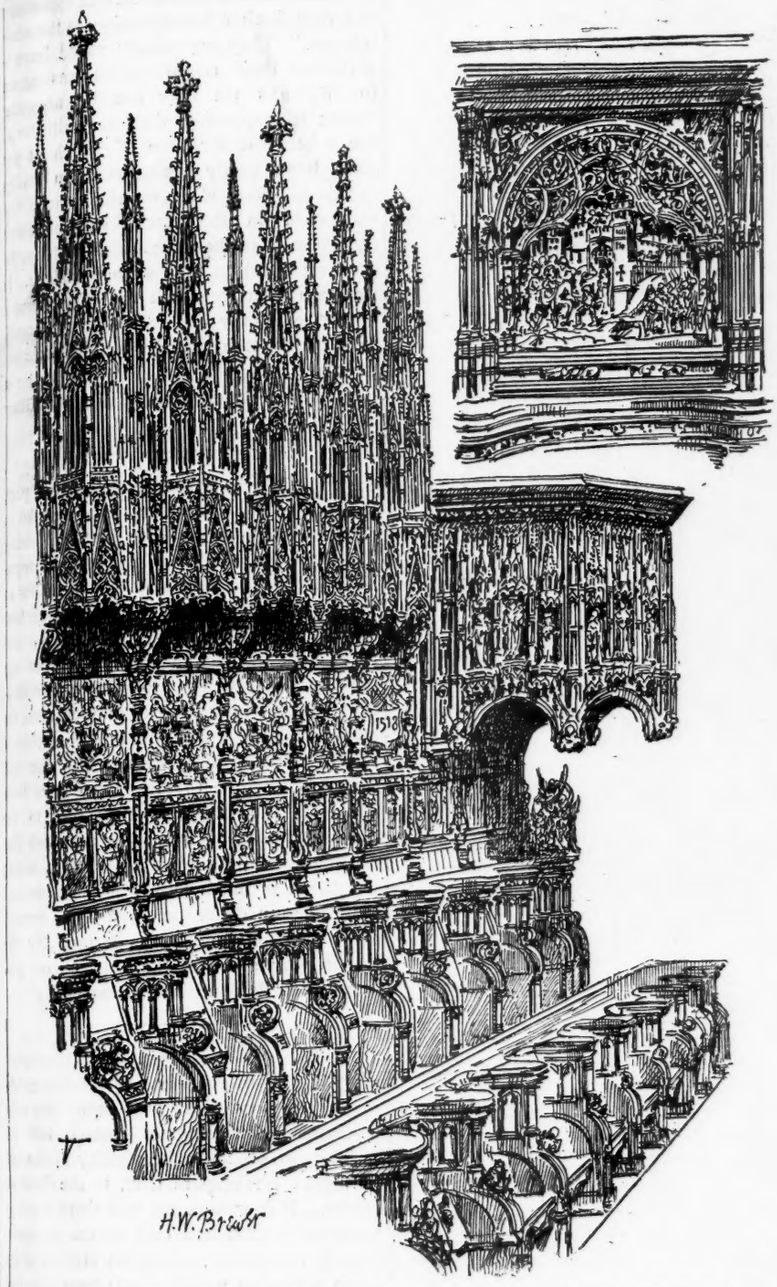


1. *Retable, High Altar, Toledo Cathedral.* 2. *Retable, High Altar, Seville Cathedral.* 3. *High Altar, Collegiate Church, Manresa.* 4. *Retable, Capilla Real, Granada.*

however, rare in Spain, which would seem to point to the fact that neither Germany nor the low countries had much influence over the design of these Spanish retables; in fact, as we have previously pointed out, it is quite as likely that English influence inspired the designs as any other foreign school.

Superb examples of Mediæval woodwork are by no means confined to the retables, for no country in Europe possesses more magnificent examples of stall-work than does Spain. The arrangement of the stalls in Spanish cathedrals and churches is quite different from that of any other churches in Europe, and is certainly conducive to a most magnificent display of this class of church furniture. In the cathedrals the stalls occupy the eastern bays of the nave, as at Westminster Abbey and Norwich. Externally they are walled right round with stone, which is generally adorned with a great deal of sculpture towards the aisles. This space is called the *coro*. The space which intervenes between the nave and chancel, or structural choir, has a railed-off passage along the centre, which enables those who are officiating at the high altar, in the sanctuary called the "capilla-mayor," to approach the choir where the ritual renders this necessary.

The naves of the Spanish cathedrals are unusually short, and very frequently there is no doorway or opening in the rood screen towards the nave, its space being occupied by the bishop's throne; there are, however, many exceptions to this rule. Of course, this renders the transept, or in non-



5. *Stalls, Barcelona Cathedral: and Lower Range of Stalls, Toledo Cathedral.*

transeptal churches the aisles, the principal congregational spaces. Mr. Street is of opinion that the whole of this arrangement is comparatively modern, but there are several arguments against this conclusion which we venture to think he has overlooked, and we will briefly allude to them, as we think this arrangement of the choir has a good deal to do with the magnificence of the stall work in Spain. The first argument refers to ritual arrangements. Most of the Benedictine churches, both in England and on the Continent, will be found to have choir stalls in the eastern bays of the nave, and not in the constructive choir; secondly, the Spanish arrangement has a great similarity to that of the ancient basilica churches; thirdly, the shortness of the nave and choir in proportion to the vast width and depth of the transepts in Spanish churches seems to suggest a ritual arrangement different from that found in the great cathedrals in northern countries; and fourthly, no reason has been advanced for such a remarkable change being made during the fifteenth and sixteenth centuries. There are, we confess, arguments on the other side, and those who wish to see them can find them stated at considerable length in Mr. Street's book.

In the parochial and many of the monastic churches in Spain the stalls are placed in a deep western gallery—an arrangement which is not uncommon in Germany, but is, we think, unknown in England. One would be inclined to infer that this is not an ancient treatment, were it not that it certainly existed in the twelfth-century Alte Pfarr-kirche at Ratisbon and some other early churches in Germany.

We do not quite understand how with these western choirs the ritual arrangement can be carried out, because all connexion between the high altar and the choir is cut off; yet certainly these western choirs were not used for lay singers, but were provided for the use of monks or clerics. Possibly in these churches a less elaborate ritual was observed than in the cathedrals.

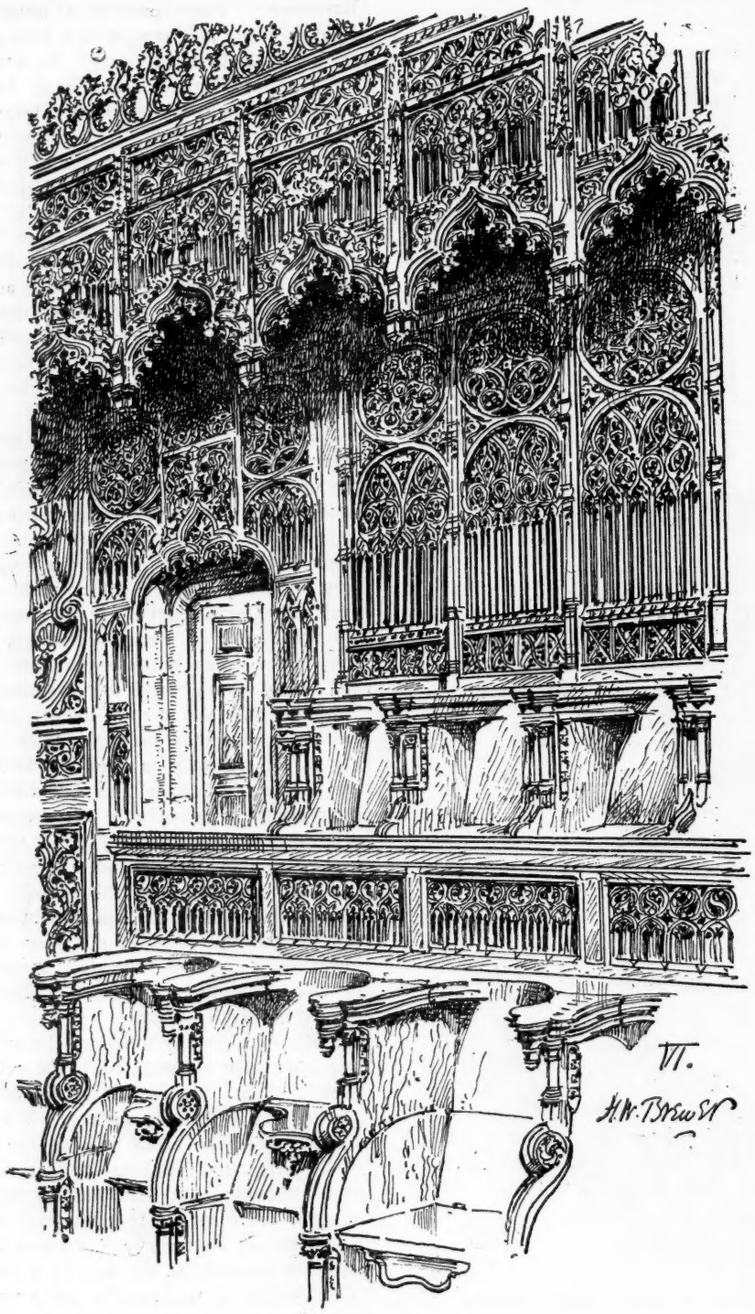
Nearly all the Spanish cathedrals possess most magnificent stalls, but perhaps the most effective are those of the cathedral at Barcelona. They present a remarkably English look, and remind one strongly of the beautiful stalls of Chester. As is usually the case in England, each stall has its separate canopy, which is very lofty, and crowned by a tall spire. This form of stall is very rare on the Continent, and if we did not know that they were executed, the lower range by Mathias Bonife, 1457, the upper range and pinnacles in 1483, we might almost have supposed them to be English work. The lateness of the date is another puzzle, as they look more like fourteenth than fifteenth century work.* There is a magnificent bishop's throne at Barcelona, and a fine pulpit, both attached to the stalls—the latter is shown in our sketch.

The stalls of Toledo Cathedral are also extremely fine. They are in two ranges, both the upper and lower being canopied, the book-rest of the upper stalls forming the canopy over the lower, as is the case in Henry VII.'s Chapel. The lower range are very elaborate Late Gothic work of a decidedly German type. Street says they are the works of Maestro Rodrigo, *circa* 1495. The upper range is partly of wood and partly of marble, of a very sumptuous Renaissance. We cannot understand the wholesale condemnation they receive by Mr. Street, as not only is their workmanship and material delicate and beautiful, but their design is remarkably picturesque and original. As, however, they are for the most part of marble, they do not properly come within the province of this article. The panels which fill in the space between the canopy and the back of the seats of the lower range are, however, very fine examples of wood sculpture representing historical events, battle-pieces, &c.

Stalls of a totally different character, of which we give a sketch, are in the monastic church of St. Thomas, at Avila, and are placed in the western gallery. They are somewhat of the same type as the stalls of Norwich and Amiens—that is to say, that although each stall has its separate canopy, yet they are brought flush to the front so as to form a continous range, and are crowned at the top by a cornice. The details of these stalls are extremely rich, and the backs, beneath the canopy, are adorned with a series of the most elaborate tracery patterns of the description which people are in the habit of describing as Flemish; but we believe that this kind of work was common to the whole of Europe, as we find almost exactly similar tracery patterns upon the stalls of the cathedral of St. Pol de Léon in Brittany; the beautiful stalls of King's College, Aberdeen; the eastern range of stalls at Bamberg, in Bavaria; the great organ at St. Petronio, in Bologna; the organ-loft of the Jacobi Kirche Lubeck; and upon the chests and screens of English churches too numerous to mention.

Attached to the stalls at St. Thomas's, Avila, is a throne, the canopy of which is somewhat singular in design and very unlike the rest of the work. There is one class of wood-work in Spain which we have not attempted to illustrate because it has been done very completely by Mr. Arthur George Hill in his "Organ Cases and Organs of the

* The heraldic paintings upon the back panels were added in 1518. They form very rich and beautiful features, and add to the attractiveness of this exquisite interior.



6. *Stalls, St. Thomas's Church, Avila.*

Middle Ages and the Renaissance." He describes and illustrates a number of Spanish examples, most of which are elaborate and beautiful. Gothic examples are given from the cathedrals of Zaragoza, Palma, Salamanca, Alcala de Henares, St. Pablo at Zaragoza; and Renaissance examples from the cathedrals at Salamanca, Barcelona, Tarragona, Tortosa, and St. Filiu at Gerona.

There are also in the Spanish churches many moveable articles of furniture, lecterns, choir-desks, prie-dieus, &c., which are well worthy of notice.

There is a special characteristic about this Spanish work which one would not have expected to find. Of course French, German, and Flemish influences are to be traced, but strangely enough English influences were evidently working their way here also. The square-headed canopies—especially where they are placed over spired ones, as we see in the great reredos at Toledo—are, as already observed, a peculiarly English treatment. The accentuation everywhere of the perpendicular lines and the square panel-like arrangement of the composition is also English; and what can be more English-looking than the stalls at Barcelona Cathedral? The tall-spired canopy over each separate stall, with a pinnacle between, and a square-headed octagonal canopy below, is unlike any Continental stalls which we have seen. This influence of English work in late Spanish woodwork is very remarkable, and adds greatly to its interest as a study.

NOTES.

Holborn to the Strand.

WE are glad to find that at the last meeting of the London County Council the Improvements Committee reported that since they had submitted their Report recommending that Parliamentary powers should be obtained for the formation of a new street from Holborn to the Strand, and for widening Holywell-street, "they had been led to believe that it would be well for them to seek an opportunity of giving further consideration to the whole scheme." They accordingly asked leave to withdraw their report, which was agreed to. Perhaps we may not be altogether wrong in supposing that our criticism of the scheme under date of March 14 may have been partly instrumental in leading to this decision; if so, we think those most concerned in the matter will ultimately recognise that they are indebted to us for drawing attention to a serious mistake. In its main idea we think the scheme was a good one, if only the spur streets are made, as they must inevitably become, the main streets at that point, and the lower portion of the central street treated as an auxiliary thoroughfare.

The Threatened Building Trade Strike.

AS we state on another page, there is likely to be a strike on a large scale in the Building Trade on May 1. Most of the societies representing the men have sent in notices for an increase of wages amounting to ½d. an hour and a new code of working rules; and unless these demands are abated, or the masters see their way to grant a considerable increase in the wages of their men, the strike will be inaugurated in less than a week's time. The threatened strike will cause no surprise to those who have been watching the progress of events in the building trade; but it is to be regretted that it should take place now, if at all, seeing that there is much activity in the trade, and that there is consequently a large demand for labour—though this is probably the reason why some of the unions have preferred their demands at this season.

Coal Borings in Kent.

WE understand that the capital of the Kent Coal-fields Syndicate has now been fully subscribed, and a contract entered into for sinking two shafts in the vicinity of the old boring at Shakespere Cliff, to the West of Dover. It is announced that there is calculated to be sufficient coal in the measures already discovered, taking an area of about 6,000 acres, to supply 3,000 tons per day for seventy years. Also, that the coal-bearing district in Kent is estimated at about 150 miles in length by about 5 or 6 miles in breadth. It seems rather surprising that any one should venture to state the length and breadth of a coal-field the very existence of which, except in a limited sense, has not yet been proved. The boring at Dover was, it is true, successful in establishing the existence of several seams of coal, the approximate thickness of which could be estimated with tolerable accuracy. That led to other borings, particularly one in the neighbourhood of Calais, which, however, turned out to be utter failures. It may be argued that these subsidiary borings were situated too far from Dover to have any practical bearing on the discoveries at that place. But it should be remembered that the Calais experiment was directly on the line of strike of the assumed coal measures, the general trend of which was established many years since. Had the Calais boring been successful, and the assumed trend proved to be a fact—namely, that the Dover coal-seams were in truth an extension of the well-known coal-field of the North of France—an expert might have been perfectly

justified in framing an estimate of the probable extent of the Kentish coal-measures. As it is, the Dover boring stands practically by itself, and it is an impossible matter—mere guess-work—to say how far the coal-seams run.

Parish Councils and Light Railways.

IT would hardly be supposed that any one would be found to advocate giving Parish Councils power to undertake light railways, but a proposal was made to that effect before the Standing Committee on Trade on Monday. Some of the Parish Councils have very hazy ideas as to the powers they already possess, and it is satisfactory to find that this proposal was promptly rejected. On the question of empowering local bodies to construct and work light lines themselves, the committee were pretty equally divided; but they ultimately agreed to the councils of counties, and of boroughs and districts having a population of not less than 10,000, being thus empowered. This is, after all, only following out the policy which is gradually investing such bodies with the control of everything of a public nature—sometimes successfully and sometimes otherwise. Each fresh addition to the power thus conferred upon public bodies presses heavily upon those to whom affairs are entrusted; and, it may be added, increases the perplexity of the individual voter as to the choice of representatives capable of dealing with the multifarious matters delegated to them.

What is a New Street?

THE appeal of Mr. White against the Vestry of Fulham, which has been decided in favour of the appellant, turns on rather a curious point, about which however there should, to our mind, have been no uncertainty either as regards law or justice. St. Thomas's-road, Fulham, was originally a road 27 ft. wide, which was paved by the Vestry in 1870, the cost being contributed to by the owners of houses on the north side of the street, but not by the owners of the unbuilt land on the south side. In 1881 the owner on the south side, being about to build on his land, offered to give a width of 13 ft. of his land to make a 40-ft. road, which was done, but the Vestry sought to make the owners both on the north and south side of St. Thomas's-road contribute to the paving of this new strip, as a new street on which their property abutted. Justices Hawkins and Vaughan Williams concurred in ruling that though the new strip was a "new street," it was not a new street abutted on by the owners on the north side of St. Thomas's-road, as the old 27-ft. width of the road, on which their property abutted, ceased to be a new street after being once paved, and could not be constituted a new street a second street. The decision seems to be plain common sense, and the action of the Fulham Vestry argues either rather sharp practice or a deficiency of logic.

New Hôtel de Ville, Ivry.

LAST Sunday the New Hôtel de Ville at Ivry-sur-Seine was formally opened. It is a building in the Renaissance style, of which M. Adrien Chancel is the architect, and was commenced in 1894. The principal façade is very effective, and is decorated with statues executed in stone by M. Camille Lefèvre, symbolising respectively the "Earth," "Electricity," "Stone," "Water," "Iron" and "Wood"; rather a new departure in the symbolism of decorative sculpture. Beneath the campanile is a bas-relief representing "France Encouraging Art and Industry." Three wrought-iron gates give access to the large central hall, out of which open the various offices of the special departments. There will eventually be an important competition for the decorative painting of the principal apartments in the building. It may here be mentioned, in connexion with the subject, that the Fine Arts Department of the Prefecture of the Seine will shortly open also a competition for the decoration of the Salle des Fêtes of the Hôtel de Ville at Suresnes, recently completed from the designs of M. Bréasson. Thus the French authorities encourage their decorative artists, while ours have only the poor satisfaction of reading papers to explain what they might do if they were allowed.

Brooks's Club.

THE trustees of Brooks's Club have made application to the Land Registry, under terms of the Land Transfer Act, 1875, to be registered as proprietors with absolute title of the property in St. James's-street and Park-place adjoining. The present club-house was built at his own charges by Brooks, a wine merchant and money-lender, after Henry Holland's designs, and opened in 1778. Brooks had succeeded Almack as "farmer" of the club, and it appears that the club, once so famous for its extravagant wagers and deep play, was originally established as "Almack's" by some prominent members of the Whig party in 1764, in Pall Mall. The Pall Mall premises were rebuilt by George Dance, the younger, in 1789, for Alderman Boydell for his Shakespeare Gallery, and afterwards occupied by the Royal Institution. Brooks made very little by his venture, and soon retired, but the club has retained his name. The house was enlarged westwards eight years ago by the taking in of the premises in Park-place.

The Overhead Trolley.

A DEPUTATION of Belfast Town Councillors has made an extended tour, visiting many European towns and cities, in order to gain material for a report on electric traction. The result of their labours is embodied in a report to the Belfast Corporation. In their opinion, all practical objections to the overhead trolley have been surmounted, and the æsthetic objections have been reduced to an infinitesimal quantity. Our electrical contemporaries are jubilant over the report, and take the opportunity of attacking the London Council for putting their veto on the trolley. We admit that we have seen some streets in which the æsthetic objections to the overhead trolley might be neglected, but we have seen many more in which the overhead work was a positive eyesore. The County Council only did their duty when they forbade the trolley on the Thames Embankment. Notwithstanding the assurances of the travelled Councillors that all practical objections to the overhead trolley have been surmounted, engineers are still busy devising means of minimising the danger of having bare high-pressure wires stretched overhead in crowded streets.

Colour Photography.

THE lecture on "Colour Photography," delivered by M. Gabriel Lippmann, at the Royal Institution, on Friday, the 17th inst., although exceedingly interesting, added but little to our previous knowledge of the subject. For the most part it consisted of a review of his own investigations, though a little historical matter was thrown in. By M. Lippman's method it is not at all difficult even for the amateur to obtain a coloured photograph. An ordinary camera suffices, the sole modification consisting in the construction of the slide in which the photographic plate is carried and exposed. The plate being first enclosed in the slide, mercury is allowed to flow in behind it from a small reservoir connected with the slide by india-rubber tubing. After the plate has been exposed the mercury is removed, and the film developed and fixed in the usual way. When dry, and examined by reflected light, the plate is seen to be brilliantly coloured. The mercury is so arranged in the slide as to cover over and be in direct contact with the sensitive film, and during exposure the metal acts as a mirror; the presence of this mirror makes the whole difference between the production of a coloured and an uncoloured photograph. The principle underlying the colouration was enunciated long ago by Newton, though not, of course, in connexion with the present subject. He showed that when two parallel reflecting surfaces are separated by a very short interval and illuminated by white light, they reflect only one of the coloured rays which are the constituents of white light. In consequence of this the metallic particles in the film instead of being irregularly disposed, as in an ordinary photograph, are arranged in lines exceedingly close together, and presenting a stratified appearance. These lines or "strata" act as reflecting surfaces, and the appearance of colour is due to the regular structure.

Mr. Fulleylove's Sketches in Greece.

THE majority of the water-colour drawings by Mr. Fulleylove, now on view at the Gallery of the Fine Art Society, are of subjects in and about Athens, and they form an interesting set of pictorial illustrations of the remains of the great monuments of Athenian architecture, treated from a painter's point of view; that is to say, the artist seems to have been more occupied with colour than with architectural detail and form; and as the work of an artist who has become known especially as a painter of architectural subjects the drawings are in this sense a little disappointing; some of the remains certainly merited rather more careful handling in the architectural sense. They give, however, a very real idea of the colour and of the general effect of the monuments. The Acropolis is shown from many points of view, and the Parthenon is largely treated. The best of the Parthenon views is perhaps No. 36, "Vista of the northern peristyle, looking westward." Among the more general views one of the finest is No. 23, "The western end of the Acropolis

seen from below the Pnyx." Others which we especially like are "Delphi from Itea" (24), "The Temple of Theseus and the Acropolis from the north-west" (73), "The Stoa of Hadrian" (77), "The South side of the Erechtheum" (78), and "The lower part of the auditorium of the Theatre of Dionysos" (62). In this latter the details of the marble work are more carefully shown than in any other drawing, and the perspective of the curved tiers of seats is finely given. The exhibition is a very interesting one both to those who do, and those who do not know the sites by personal visitation.

The Louvre and the Luxembourg.

THE galleries devoted to Egyptian antiquities at the Louvre have been completely re-arranged. The alteration, which has been carried out under the supervision of M. Bénédite, results in the complete separation of the monuments before the invasion of the Hyksos from those later than that date. At the Luxembourg the forty pictures representing the legacy of M. Caillebotte, referred to in our last, will be placed as soon as possible in a temporary annex to be built on the terrace next the gardens. The selection includes paintings by Manet, Lézanne, Claude Monet, Renoir, Sisley and Pissarro, and pastels by Degas and Millet.

A New Stained Glass Window.

AT the works of Messrs. Britten & Gilson, in Southwark, a window, designed by Miss Lowndes, has recently been on view. It is of three lights, and is to be placed, as a memorial window, in the south aisle of St. Peter's Church, Saffron Hill. Rather more than the upper half of each light is occupied by figures of St. John, St. Peter, and St. Paul, represented as martyrs, with crowns over their heads, and a landscape background, with river and trees carried across the entire width. Below, divided from the large figures by a band of nearly white glass, ornamented with foliage and fruit conventionally treated, are three scenes of martyrdom. In one of the lower corners of the window is a memorial inscription in a small panel. The material used throughout is "Prior's" glass, and the window, although not a large one, is an interesting example of the use of this material, the unevenness of the surface being well adapted to the representation of the folds of drapery. The rubies are very fine, and also the yellow in the crowns over the principal figures. The hands and faces have been treated in white glass, and but little shading has been done. A good deal of extra labour is, no doubt, entailed in cutting and leading this glass, but the result is excellent, and both Miss Lowndes and Messrs. Britten are to be congratulated on the success of the work.

Objects found at Silchester.

AN exhibition of the antiquities discovered on the site of the Romano-British city at Silchester, during the work of the past year, will be held at the Society of Antiquaries' rooms from Monday, April 7, to Saturday, May 9: admission being free on presentation of a visiting card. The collection will include some interesting examples of ancient mosaic.

MINOR EXHIBITIONS.

AN unusual number of small picture exhibitions have been opened during the past week. The most important to our readers, that of Mr. Fulleylove's sketches in Greece, is specially noticed in another column, as being more directly connected with our class of subject.

The exhibition at Messrs. Arthur Tooth & Son's Gallery is of considerable interest, not only as it contains some high-class works by known artists, including a fine example of M. Bouguereau's academical but always graceful and learned art, but also as containing some works of great promise by two landscape artists whose names are new to us, Mr. David Farquharson and Mr. Blandford Fletcher. The former paints Scottish scenery with considerable breadth and power of style and colouring, and in a manner which suggests French influence in his training. Mr. Fletcher's small landscapes are painted a good deal in rather flat colour without much indication of detail, but with a very decided feeling for colour and sentiment in landscape, and he seems likely to make a style of his own.

The collection of paintings at the Grafton Gallery, which has been a great deal talked about, is rather a motley one. The large paintings by Professor von Payer in illustration of the tragedy of the Franklin expedition are interesting from that point of view only, as their artistic quality is of a very commonplace order. In the remainder of the galleries Mr. C. Sedelmeyer has got together a collection of the works of various foreign artists, some of whom we are glad to make acquaintance with. Herr Eugene Jettel, of Vienna, is not exactly a great landscape artist, but he is a very capable one, with considerable versatility in regard to subject and effect, and his thirty-nine pictures exhibited are worth a visit. Some paintings by Herr Charlemont, a pupil of Makart, are brilliant but somewhat sensational in their hard execution, that called "The Message" shows however a good deal of power of characterisation. Munkacsy's brilliant but flashy style is exhibited in a picture highly characteristic of him, and which contrasts curiously with Professor Brozik's work "A Communion of the Early Bohemian Protestants," which hangs next to it, and represents older traditions of painting; Professor Brozik was a pupil of Piloti. The octagon room is occupied by pictures by Signor Tito Lessi, interiors with figures which are cast rather in the same mould; but one work, Milton as a young man visiting Galileo at Arcetri, is really powerful and dramatic, and should not be overlooked.

It is difficult to know what to say about the works by "Mr. William-Stott of Oldham," as he chooses to call himself, exhibited at the Goupil Gallery. Many of them are mere smears, though there is no doubt a good deal of originality of colour and effect to be found among them, combined with a great deal of ugliness. The nude figure of Venus coming out of the sea-foam is to our thinking simply repulsive—badly painted flesh and a mean and ugly head which might belong to a common type of factory girl. In the "Endymion" the figure of Diana, a type which the artist has repeated several times, is very badly drawn. The catalogue is prefaced by some rhodomontade by Mr. Hall Caine in the usual exaggerated laudation of the literary puff which it is now the fashion to affix to catalogues, a fashion we could well dispense with.

In Mr. Oliver Hall's small collection of works at Dunthorne's Gallery there are some good etchings in the true style of etching, which we are always glad to welcome; "Near the Docks, Lynn," and "An Old Timber Jetty, Lynn," are admirable examples of compositions in etching which attempt nothing beyond what etching can best give; the last named especially.

Mrs. Rowan's drawings of "Australian Wild Flowers" at the Dowdeswell Galleries are interesting in their own way, and are carefully and brilliantly executed, but they are not in the proper sense works of art, being rather what the Royal Academy professes to refuse as "mere transcripts of the objects of natural history."

Among the Paris minor exhibitions is one, at the Georges Petit Gallery, of works by Mdlle. Louise Abbema; including flower-painting, sea-pieces, landscapes, and portraits; about fifty in all, making a charming selection in which everything is worth looking at. We may mention especially the two charming pictures — very Parisian or "Parisienne," entitled "L'Été" and "L'Hiver"; also the sea-coast studies at Belle-Isle-en-Mer in Brittany. The flower-pieces are also remarkable, especially the series of decorative pieces for panels and fans.

At the Durand Ruel Gallery there is an exhibition of water-colours by M. René Binet, who, after a brilliant carreer as a pupil at the École des Beaux-Arts, obtained the Chaudesaigues prize, and on the basis of this success made a tour in Tunisia, Italy, and Spain. Among his works here are some views of the Alhambra treated with great power and an exact knowledge of the architectural detail.

ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE ARCHITECT'S USE OF COLOUR.

THE eleventh ordinary meeting of the members of this Institute took place on Monday last at 9, Conduit-street, Mr. Aston Webb (Vice-President) in the chair.

The decease was announced of the Chevalier J. Da Silva (Hon. Corr. Member), Portugal, elected in 1864; and of Mr. Arthur Billing, elected Fellow in 1863, and placed upon the list of Fellows retired in 1894.

Messrs. Halsey R. Ricardo and Christopher Whall then read papers on "The Architect's Use of Colour" (under the management of the Art Standing Committee).

Mr. Ricardo commenced by remarking that what a powerful resource colour is to an architect was pressed home to him incessantly in the streets of our towns. What was it that arrested his attention and dwelt in his memory after his walk was over? The shop windows and the beautiful stuffs inside them, the tiled window flower-boxes, the waving heraldry of a flag, the scarlet splendour of a chimney-pot touched by the sun's rays and backed by the immeasurable blue of the sky. In the streets of to-day, except in the few occasions when monumental building was possible and permitted, the regulation architecture seemed strangely superfluous. Who wanted all the pomp of cornice, pilaster, architrave, and string? Not the passer-by, certainly; for without them the streets would be wider, brighter, and clearer. Not the owner, who went to the expense of providing these costly features, for he put outside them great 6-ft. gold letters, setting forth his name and profession. It was the architect who wanted it, and he had been dreaming a fond dream. With the use of colour you might forego mouldings and projections; you got their effect by other means. He was frequently in sight of a wall, built by Mr. De Morgan and faced with his tiles. He had seen it at all seasons, under all weathers, in all lights and twilights, and it was always a feast and a rest to the eyes. The glazed brick or tile was a piece of permanent colour, wind-proof and rain-proof, and, so far as it went, germ-proof. He advocated glazed material and intense colour in the streets of manufacturing and crowded towns, where there was no other colour. In the street, where all the colour there is is of man's own making, it should be full and strong. Besides the convenience of colour there was the distinction. What pleasure had we lost when they blotted out the tile panels in Piccadilly that were over a shop that once was Sotheran's and was now a sausage-maker's! The shop had other and considerable architectural merits, but these panels gave it a distinction, causing one to pause and discover its other beauties. Colour enabled one to dispense with much of the architectural frippery felt to be requisite to prevent the surfaces of ungraduated plain tint appearing too bald. Some years ago there was at Barnard's Inn an exhibition of furniture. It was a small but most interesting exhibition. It had various gospels to preach, and it preached them eloquently. One, which pressed itself upon him especially, was that where you had a colour scheme you could dispense with mouldings. A thin line of inlay here, a broad band there, quaint juxtaposition of the figure of the woods, apt employment of various kinds, not only took the place of mouldings unremarked, but seemed almost to cry out, "Isn't this a better and a truer use of the material?" What amount of moulding had the Japanese cabinet? They built their street houses without cornices, strings, or window-sills, and yet receive the thanks of the traffic in the streets. They should be faced with materials not affected by the town's atmosphere. This would exclude marble, terra-cotta, brick, and stone, and leave polished granite, glazed bricks, and tiles. It would exclude the tender softening that the finger of Time traces on our buildings—blunting here, harmonising there, accentuating, and suppressing; but in our manufacturing towns what was this broidery that Time flung round our buildings? It was made of soot. The upper part of a corner shop in Oxford-street was covered with white

glazed tiles—a very trying test—but a film of "London's Entire" settled on it in a very short time, and it required some adroitness to select such a position as should show the glare. That corner shop was a lost opportunity. We travelled all the way to Pistoja to see John Robbia's coloured terra-cotta frieze to the hospital there; we passed by unremarked the frieze of uncoloured terra-cotta to Heath's hat-shop. As to cost, the money wasted in idle profusion of column and baluster and carving would defray the extra cost of a faïence front, treated in sober common sense. As to the architect's actual use of colour, what could be said beyond that his use of it should be large and broad? Indoors the colour might be in picture form; but out of doors they required effect, not detail—bands, diapers, amongst which the windows located themselves without regard to pattern or symmetry. The pattern was valuable merely as a convenient system of gradation. As to modern instances of coloured building materials, he would only cite Mr. Butterfield's work. At St. Mary's Church, near Torquay, the church was a symphony in Devonshire marble and alabaster; near Plymouth the material was granite; near Midhurst, clunch. But Keble College was the great achievement. Mr. Butterfield had taken the strong step of playing confidently into the hands of time. When our descendants were heading their letters with the year 2000 and more, they would treasure amongst their possessions at Oxford of the Middle Ages this amazing jewel of our own times.

Mr. Christopher Whall said that painters watched architecture a good deal more than architects imagined, and their intention was first and chiefly arrested by that quality in which they themselves were specialists; and when they saw architects of eminence using that flat, harsh, shiny, ochreous, drab terra-cotta, or some discords in purple slate or the hardly less fearful discord in green slate, when used—as architects persisted in using it—in conjunction with red sandstone or red brick, their eyes got no further, and they looked away at once from buildings which often contained great beauties of other kinds, because they were presented in these colours. As to the method of selecting colour for buildings, Mr. Whall said, "I called on an architect lately and found him surrounded with half-yard samples of 'ecclesiastical' textile fabrics, which he had laid out on the floor. 'Oh, you're the man I want,' he said; 'come and tell me what to choose for the dossal of my church.' 'Dossal,' said I, 'isn't that an upright thing?' 'Yes—you know—goes at the back of the altar.' 'Well,' I said, 'I thought you were choosing a carpet. Why don't you hang the things up?' So he hung them up. Then I asked how far off he wanted his effect to be judged from; and I found it was a big church, where no one except the ministrants would come within fifty feet of the thing. I then asked him if he would not by chance be going down to the church itself (it was a good way in the country) before he need send the samples back. 'Oh, yes,' he answered, 'I'm going down to-morrow; that's why I wanted to choose the pattern, so as to show the parson. 'Well,' I said, you wanted to choose the pattern in your office *because* you were going down to the place itself to-morrow — that's one of the drollest motives for a human action that I ever came across.' Of course, the end of it was that he took all the patterns down 'to-morrow,' and found that not one of them would do." On the other hand, painters, misled, he inferred, by associating with architects, were actually adopting the lamentable practice of painting mural decorations in their studios and then having it fixed up. It should never be done, and it never need be done. He had no objection to the wall being lined with canvas if good plaster was not obtainable. He liked plaster much the best, but he lately did a mural painting in a London church, and the plaster being insecurely keyed on to the brick, he had it lined with canvas. But he put it up plain, and painted the work *in situ*. What he wanted to speak of chiefly was the use of colour in ordinary methods and materials. If you took your sample of material to the spot, and put it up at such a distance from the eye as to cover about the area the material was to fill, no doubt it would not tell you everything; but it would tell you *something*. It was possible, with a very small bit of material, placed in its right light and on the spot, to judge approximately of the effect of a large area of the same. Here was a sketch of a stained-glass window. He went down to the church after he had made this sketch, and finding it hanging up said, "Let's try and see if we can't tell how the window would look in its place." He put it up in the brighest light of the nave, and retired to such a distance that the sketch just covered the open space of the window. He said to the architect, "I know what the window wants;" he replied, "More blue;" and he (Mr. Whall) said, "Precisely." He thought that was distinctly getting a step nearer to one's conditions. It was not quite so good as having the window in its place and out again, but it was the next best to it; and this was mainly because one saw it in its place. It might be a good window enough in itself, but that was not quite enough; one wanted it to be quite suitable to its surroundings. In regard to the choice of the prevailing colour for a building, he observed that the treatment of a dark building with light colours did not succeed in making the building look bright, but it did succeed in making the colours look dull. He lately had to paint a fresco in a very dark chapel—the little mortuary chapel at St. Alban's, Holborn—and was allowed to choose the colour for the walls to suit his work. He indicated a deep russet red. For one reason or other the colour did not suit. By the advice of a friend who had made plain colour for walls quite a specialty, they glazed it down with alizarine crimson, a colour so terrifically strong that one double colour-box tube painted the whole chapel. People said, "Won't it make it dark?" His friend's reply was, in effect, "Your timid compromises can only make it dingy; this may make it solemn," which it exactly succeeds in doing. He would draw another moral, this time from nature. Here was a handful of the sea-beach, taken quite haphazard exactly opposite the esplanade of a large watering-place in North Wales. The houses were chiefly of stone about the colour of the bed of an estuary at low tide, and the remainder of pebble-dash, carefully made to match the colour of the stone; and, wandering along the shore with this dainty and gay mosaic at his feet, he wondered whether amongst the hills from which these stones were washed down to the beach there were no masses of the same, large enough to pay for the quarrying, and capable of mitigating the intolerable dulness at his side. For it was to be remembered how small an added note was enough to enrich the harmony: the little chequers of flint, how they charmed the grey stone tower into life without any loss to its dignity; and how flint and stone both rejoiced at welcoming the friendly spots of red brick in some Eastern Counties tower! Architects failed to take full advantage of the varieties which existed in any one material itself. Nature mixed the stone, and that was equal to saying that it is more beautiful mixed; but the unsympathetic commercial mind, whose training had been such as to make the only ideals those of exactitude and precision, would not be happy except in sending out batches of what was known as "excellent building material," well matched to sample. Yet if enough architects would combine they could soon "change all that;" for it was also a maxim of the commercial mind that demand created supply, and to this principle an appeal might surely be made with success. He did not know whether there existed any collection or museum of materials used in building; but he rather wondered at the rarity with which anything of the kind was seen in an architect's office, where one would expect to find a few of his pet materials, if only as mementoes and memoranda of his past work: some slabs of this or of that; some rough sketch model of them in combination; a sketch in glass or a few specimens of the material. Painters would not then feel as if an architect's practice of his art consisted in staring at a sheet of Whatman's paper from ten till five, and then going home to a well-earned dinner and repose. In their aspirations after colour, then, he would suggest, as directions in which change and fresh effort might lie:—More experiment in proportion to the paper work, and the treatment of the latter as merely the sketch, and the building as the picture; the founding of colour schemes upon nature; the frank acceptance of conditions; the practice of working more on the spot, and less in a central office; the use of local materials in all country building; more attention to tint, texture, and also what painters spoke of as "quality" in the treatment of surfaces painted in plain colour or stained; the use, even in small quantities perhaps, of a more varied range of materials; and the endeavour to create, in the ordinary trade, a supply of material less rigidly assorted, both as to size and tint.

Professor Aitchison, in proposing a vote of thanks to the writers of the papers, said that he had always looked upon the people who had made fine stained glass as possessing almost divine attributes. The windows of Chartres were the finest things that had ever been done, and there was some old magnificent glass in the choir of Canterbury, and also some at Cologne and Strasburg. Then there were the magnificent windows at the Cathedral of Florence, and in the houses and mosques of Cairo, as well as the splendid Persian windows in the Suleimanyeh at Constantinople, which must have struck all persons who loved colour. One portion of these interesting papers had pointed out how permanent colour might be used on buildings. Splendid bas-reliefs in enamelled niches were used in Persia more than 2,000 years ago. Certainly twenty-five years ago he had advocated the use, in London and some of the large manufacturing towns, of coloured pottery as being, in the end, not only more beautiful, but also more economical. If glazed bricks were made so as to withstand this climate, they could be perpetually washed, instead of the houses having coats of paint laid on. There was one very magnificent passage in M. Charles Garnier's vision of what Paris would be, when it was decorated with marble, gold, enamel, and mosaic, and when the passers-by would not only see splendid colour, but would also desire to have their clothes made of splendid materials to match that which the buildings had begun. One of the great things was to get a combination or gamut of colour, which would suit the particular climate. London, for instance, would look very different if, instead of having dingy, begrimed, and black, or dust-coloured bricks, it was flaming in purple and gold. Tiles, unfortunately, had not been found to stand when used externally. There was a house in Oxford-street, which had not been mentioned, where coloured terra-cotta had been used, and which had apparently stood very well. He believed it was a restaurant, where a dull green and gold had been used, the only thing being that it hardly did justice to the splendour of material and colour that could be got. Most of Mr. Whall's suggestions were as excellent as his paper was interesting and amusing, but the difficulty was to put these suggestions into practice. He was quite with Mr. Whall in saying that architects would like to have new kinds of clients, builders and workmen, though personally he had reason to be grateful to them all. The architect, who looked on a sheet of paper, was rather to be sympathised with than found fault with. M. Charles Garnier had said, marble, when decayed, looked well, being like a gentleman out-at-elbow, instead of like a rustic in his best clothes, but in London perishing marble became a mass of soot. The aim of getting a thing wholly of one colour was exploded, and would not be carried out by anybody now who claimed the name of architect.

Mr. H. H. Statham, in seconding the vote of thanks, said that Mr. Ricardo had admitted having stated his views rather strongly in order to provoke discussion, so that he might be excused in rather questioning some portions of it. He noticed that when people read a paper on colour in architecture, they generally commenced by saying that nothing else was of any consequence. Mr. Ricardo asked what was the good of the cornices and other moulded features in street architecture. He himself did not think it necessary to take that ground in order to recommend colour; he found a good deal of the modelled detail in street architecture interesting. Mr. Ricardo observed that people went abroad to see Robbia's coloured friezes, but cared nothing for the terra-cotta on Heath's shop. But Mr. Ricardo must have had his attention attracted by it or he would not have remarked on it; and, with all deference to the memory of a great artist, it was a question whether Robbia's coloured friezes were not too realistic to combine well with architecture. Mr. Ricardo had referred to an exhibition of furniture at Barnard's Inn, which showed that with colour mouldings could be dispensed with. That was illustrated in ancient architecture. In hot countries, where colour had full effect, there were few mouldings, and what there were, as in Indian and Saracenic architecture, were generally bad. Shadow and colour fought with each other; when they used mouldings they depended on shadow, and did not so much want colour. With regard to the mosaics at St. Paul's, which had been referred to, the work was a splendid success, except for some of the details being rather too small to be seen, but the question was whether it was not, in a sense, rather too good for St. Paul's; that rich and almost woolly-looking surface got by the method of setting the tesserae, however beautiful in itself, seemed out of keeping with the

character of the building, and belonged rather to Byzantine architecture. As to the use of coloured tiles in architecture, the French had been much bitten with that lately, but they did not use the tiles in broad masses but in little bits and panels of colour. It was a question whether that was the best way of doing it, spotting little bits of colour in the midst of uncoloured materials. He could not sympathise entirely with the admiration expressed for Mr. Butterfield's polychromy; certainly the church near Torquay was very charming, but Keble College surely wanted repose. Mr. Whall's paper was a most interesting one, as he told them so much about the practical work of the decorative artist. In regard to the system of painting mural decoration on canvas in the studio and then fixing it in the building, that was originated in Paris, where they had such immense wall-space at their annual exhibitions that painters were tempted to execute large mural paintings for the Salon first, and then transfer them to the building. This custom had gone on at an increasing rate for the last few years, and with very bad results; at the last "New Salon" exhibition M. Lhermitte exhibited an immense picture intended for the decoration of the Paris Hôtel de Ville, representing the Paris markets, which was simply an enormous realistic *genre* picture, with no decorative quality at all, painted to produce an effect at the exhibition. That was fatal to decorative painting. Was Mr. Whall's experiment of looking at a brick six feet off calculated to give the effect of a larger space of the same colour one hundred feet off? The experiments with the window designs *in situ* were, however, exceedingly interesting. As to the materials gathered from the sea-beach, and their colour effect in contrast with the material of which the houses were built, that was not a lesson needed so much by architects as by builders; it was the speculative builder who mostly filled watering-places with dull buildings. Mr. Whall was not fair to architects in saying that one found no specimens of coloured materials in their offices. His (the speaker's) experience was contrary to that; Mr. Whall must have gone into the wrong offices. All would agree, however, that the two papers they had heard were most interesting and suggestive; original both in the thoughts and in the manner in which they were put.

Mr. John Brett, A.R.A., said that they must bear in mind the two different sorts of colour available in architecture. The first was specific colour, or the actual natural colour of the materials used; and the second sort of colour available was applied colour. Applied colour required a totally different treatment, and, particularly speaking, specific colour only was available for the outside, and applied colour for the inside of buildings. There were beautiful examples of both to refer to, so it was not a matter of speculation. As far as specific colour was concerned, they had happily a beautiful example of the application of it to the inside. He would not speak of the outside, because it was obvious that anything they could put outside buildings would be invisible in the course of a few years, by reason of the dirt. But they could refer to splendid specimens, both of specific colour and applied colour, if they contented themselves with the interiors. They would see a specimen of the interior treatment with specific colour if they went to the late President's house. In that case everybody was completely agreed that the result was exquisite, depending as it did on fine marbles, beautiful Oriental tiles, and admirable mosaic friezes. These were the three materials he knew of for specific colour, and if these were applied to interiors they were probably as enduring as the world. If they wished to construct a public building, he believed they could not do better than study that specimen of modern art in colour. They had only to refer to the Vatican to find the effect of entirely depending on the superficial tints laid on in tempora. In covering a surface with tempora they could only be certain of one thing, that by making it uniform it would be made hideous. That was the fundamental principle in applied colour. Where colour was not minutely graduated and delicately modulated it ceased to have any effect upon one, and hindered the wall from reflecting light. The architect, he found, had omitted to consider that a wall was primarily useful as a reflector of light, and in domestic architecture it seemed that no one had any business to use colour. There was this to be said in favour of applied colour, that age and a moderate amount of dirt were altogether favourable to its beauty. A new building might be said to be an incomplete building, age being required to stain and modify and fade the crude colours originally laid on. The first time he visited the Vatican he found that the loggia had not been touched, and the background of the arabesques was a delicate ultramarine, modified by time and weather. There was an unfortunate man, however, beginning to work in a corner, for Victor Emmanuel, with the idea of restoring the background of the loggia, and the delicate ultra-marine was being painted out with a good dense coat of Reckitt's blue. The arabesques of the Vatican doubtless were ugly, but their outlines had been so much blurred by time that they were hardly traceable. The designs, too, were very poor; they had, no doubt, been done under Raphael's direction, but as cheaply as they could be done. He recommended them to go and see the specimen of applied decoration in the Arab Hall at South Kensington, because there was nothing equal to it in England. Monreale in Sicily was the best specimen of mosaic, but the Arab Hall did not depend so much on mosaic as upon marble.

The Chairman thought they would be all agreed that they had had most interesting papers from Mr. Ricardo and Mr. Whall. Mr. Ricardo had recommended the use of glazed bricks, as a means of introducing colour to the outside of their buildings, and he had also had the courage of his opinions, as they all knew, in adopting them himself with the most successful results. The earlier attempts at glazed surfaces, by which Sir Gilbert Scott and many others had a wish to introduce colour into their buildings, seemed to have failed because they were introduced in bands or in patches, as Mr. Statham had said. In time the vitrified surface remained bright, while all the other surfaces took the coat of soot and dirt, which came over London. Mr. Ricardo had adopted the principle of facing the whole wall with a vitrified surface, which gave a very much better result. Mr. Whall had kindly shown architects as painters saw them, and they were all glad to see themselves in that light. At the same time he could not but think that the architect who had studied the wall-hangings on the floor was a poetic image of Mr. Whall's. Architects would like extremely to be able to put up their buildings first, and then to vary and improve them, but that was not a thing they could do. The difficulty they had was that when once a building was put up they were practically compelled to leave it there, so that all their work from the beginning to the end of their lives was present to speak for the failures that they all knew they made, and to show the effort and the striving from the beginning to the end. They could only endeavour in such cases to do better with the next building entrusted to them.

The vote of thanks was then put and very cordially received.

Mr. Whall replied for himself and Mr. Ricardo, the latter of whom had nothing to criticise with regard to the discussion. Professor Aitchison had said that it was not so easy to carry out his (the speaker's) views as he seemed to think, but his reply to that was that he was talking of ideals. He was not making criticisms of what he conceived to be alterations, which were immediately possible or easy, but was talking of what he thought might gradually be improvements upon the present practice. He had felt conscious that he was adopting an attitude rather of criticism, but he must shelter himself as an excuse for that in Mr. Ricardo's remark, that his words were intended to be provocative. The expedient of placing the brick at a distance of 6 ft. was only applied to rough experiments, and where he took the arbitrary length of 6 ft. as an easy thing to remember. He had varied his distance from the specimens, and had also varied the distance of the specimens from the landscape. He was afraid he must have gone into the offices of the wrong architects.

The President added that their thanks were due to the gentlemen who had lent the tiles and materials exhibited round the room.

The President further stated that the annual meeting of the Institute would be held on Monday, May 4, to receive and discuss the annual report of the Council, to appoint the statutory Board of Examiners, to elect auditors, and to appoint scrutineers for the annual election of the Council on the four Standing Committees.

The proceedings then terminated.

Since the meeting the editor of this journal has received a letter from Mr. Ricardo, not written for publication, but part of which (with his consent) is here subjoined, as it further explains his views on some of the points discussed:—

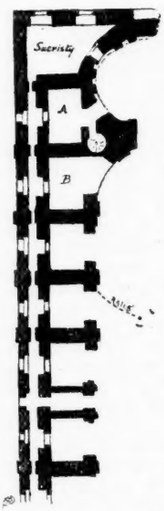
"I wanted to say just a word in mitigation of the impression that Mr. Whall gave off as to my reason for not replying at the end. To my perhaps alarmed imagination, he seemed to explain that I didn't reply because there was no occasion. I hurriedly asked him to reply, because I thought there wasn't time enough for both of us to do so, and the balance of criticism seemed to me to touch him. But I should like to have spoken on two points at least that you raised. One touching the use of cornice pilasters, &c. It is in streets and other sunless places that I want them abolished. Where you have monumental buildings standing alone, or in squares and wide spaces, in the blessed sunlight, there have as much form as you will. But in narrow, dark streets there is neither occasion or need for them, and they are only vexatious if they do occur. But we want something in their place, else endless Harley-street would be almost as bad as the evil it hoped to supersede; this remedy is colour.

You quoted instances (oriental) when colour carried off the absence of mouldings—nay, even atoned for the presence of bad mouldings. Colour conceals, modifies, and destroys form; and with colour you want the minimum of constructed light and shade, the mass of the building and the disposition of the colour being as important here as in other cases.

The other point was about Heath's terra-cotta frieze. To all but a few I believe it to be unremarked; treated in colour it would become notorious—not so notorious, I grant, as John Robbia's; but probably all those who have seen the one would notice and remember the other. And in colour you would see it. At present you can't. You are jostled off the pavement into the jaws of the wide-mouthed galloping omnibus, and if you have been spared to pick up your life out of the gutter, you will, in sheer thankfulness and terror, vow never to tempt your fate that way again. HALSEY RICARDO."

A CONSTRUCTIONAL CURIOSITY AT THE "ORATOIRE DU LOUVRE."

THE Church of the "Oratoire du Louvre," at Paris, can boast of a constructional curiosity something similar to that at the Sorbonne, under the dome; nor is it very surprising considering that both churches owe their design to the same mind.



There are plenty of chapels in towers and lofty places, and such well-known examples as those of Mälstricht and Cluny recur to one's mind. Those chapels were always dedicated to St. Michael and All Angels—for what reason it would be interesting to know.

As will be seen by the plan—traced from that given by Jean Marot in the latter half of the seventeenth century—there were four chapels hidden from the congregation, and two sacristies, one on either side of the quaint little domed chapel behind the high altar. These sacristies were entered from this little chapel by doors invisible to the congregation. The chapel is now used as a Salle de Consistoire for the ministers of the Reformed Church, who now tenant the old convent of the Oratorians: but the sacristies disappeared when the Rue de Rivoli was completed in that quarter.

It will be noted that there is a narrow passage between the aisle chapels and the nave ones; this passage was railed off in 1749 by very handsome wrought-iron work picked out in gold. At the transepts, however, which are flush with the aisles there is no railing, and there are no chapels, but a clear passage to the street.

The chapels extended, with the exception of the transepts, for the full length of the church, and in some, even now, though fitted up with pews ("tribunes," as the pastor informed us), the carving is still to be seen, and is fairly well preserved. The aisle chapels were some 12 ft. or 13 ft. long by 10 ft. in width, and 20 ft. high.

The west front, in the main, was designed by Lemercier, but the architect who completed the church took liberties, and varied it a little in arrangement, and entirely in detail.

The present Salle de Consistoire was used as a

sacristy for some time, but of the two that have disappeared there exists the following note from the visitation of 1673:—

"Les sacristies . . . . sont situées derrière le chœur, l'une où les prêtres s'habillent pour l'autel, l'autre où ils prennent les surplis."

The history of the "Oratoire du Louvre," by the Rev. A. M. P. Ingold, illustrated from old prints, as well as showing the present state of the fabric, is extremely interesting and instructive. He, however, calls it the "Oratoire St. Honoré," evidently from the main front of the church facing that thoroughfare. The author, besides being an antiquarian, is an Oratorian, and has, of course, been able to obtain access to the archives of his order, and those in connexion with its former interesting church.

JOHN A. RANDOLPH.

BUILDING TRADES EXHIBITION, MANCHESTER.

THE Building Trades and Home Comforts Exhibition was opened at St. James's Hall last Monday, April 20, under the presidency of Mr. Alfred Darbyshire, architect. Amongst others on the platform were the following architects:—Messrs. Knill Freeman, Smith (Darbyshire & Smith), Willoughby, Heathcote, Davies-Colley, Kirby (Liverpool), M. Ogden, and J. Holden, President of the Manchester Society of Architects.

The President dilated on the advantages such exhibitions afforded to the architectural profession, and Mr. John Holden, in declaring the exhibition open, spoke of its advantages not only to architects but also to the general public, by enabling them to be educated to judge for themselves of the merits of the various materials offered for their inspection.

The hall lends itself easily to the requirements of a show by a spaciousness which allows plenty of room to the stands, and free and comfortable access around them.

Perhaps the portions of the exhibition most instructive to the architect are those exhibits which come under the description of sanitary specialities. Messrs. Doulton may claim distinction on account of the size and completeness of their stand. Their latest ideas on drainage, &c., and domestic appliances for sanitation are fully exemplified, and will well repay a visit of examination.

Messrs. Duckett & Son, Limited, have a large show of latrines, gullies, and arrangements for flushing automatically slop water-closets with slop water or any waste water made about a dwelling. The effects can be tested on the spot, as the stand is supplied with water.

The appliances of P. Mooney claim notice to the thought and care which a registered plumber can bring to bear on the scientific branch of his trade.

There are two interesting exhibits from slate quarries,—one from the Buttermere Green Slate Company, the other from the Oakeley Slate Quarrie Company. In addition, the latter firm show at given times the process of slate splitting, by which slates may be cut to a thickness less than that of a shilling. Brickyards are well represented by the Accrington Brick and Tile Company, the County Brick and Tile Company, and the Brickley Rock Brick Company and others. Mr. Sidebotham has a stand which contains many patents gathered together from firms, such as Bank's fireproof construction, Gibbon's locks, Shap Granite Company's patent concrete, St. Pancras Ironwork Company, Wright's fixing blocks, &c. Besides the above, examples of crystalline tiles are given as applied to the surfaces of hospital walls on account of a non-porous surface, which promises never to crack. The Lancashire and Cheshire Opalite Glazed Brick and Tile Company claim also that their opalite glazed bricks will not crack.

In the woodwork department, the school fittings of the Bennett Furnishing Company, Glasgow, and the North of England Furnishing Company, Nottingham, make excellent specimens for exhibition. A good example of the swivelling and folding partitions manufactured by Peace & Norquoy, Manchester, is suspended on their stand. It is for the schools at Port Sunlight. The Leeds Steel Works, in a nicely-arranged exhibit, display sections of joists and pillars in steel, all put in an interesting form.

Messrs. Wilson & Co., Manchester, have a good exhibit of their many specialities in ironmongery, &c., which, although within the range of building materials, may fairly be classed with "home comforts." This portion of the exhibition we cannot pretend to touch, as so many things would require notice which come under the title so elastic as "home comforts." We must not forget that a feature of the exhibition is the collection of architectural drawings arranged by Mr. Smith (of Darbyshire & Smith), from local architects principally. We shall reserve our remarks on this portion of the exhibition until our next issue, when we shall comment also on another exhibition of architectural drawings held concurrently by the Corporation of Manchester in the City Art Gallery.

Before we take leave of the Building Trades and "Home Comforts" Exhibition we must not forget to say that Mr. A. P. Baker is its promoter, and that he proposes to make it biennial. Men who undertake such responsibilities deserve every support, as by their efforts the works of inventors have a practical chance of coming before the public. The exhibition remains open till May 9 next, and those who can should avail themselves of its opportunities.

THE CAPACITY OF WATER-CLOSET FLUSHING CISTERNS.

A REPORT has just been made by Colonel Ducat, for the Local Government Board, on the subject of the recent inquiry as to the alterations which the London County Council had asked the London water companies to make in their regulations under the Metropolis Water Act, 1871, respecting the capacity of water-closet flushing cisterns, and other matters. The inquiry was the outcome of a report by the Public Health and Housing Committee of the Council, which stated that the by-laws of the eight water companies which supplied the Metropolitan area should be amended, so as to give a greater supply of water for sanitary purposes. The companies refused to comply with the recommendations of the Committee, and the inquiry, which lasted several days, was held in October last by Colonel Ducat, R.E.

The principal amendment suggested by the London County Council was in regard to Regulation 21 under the Metropolitan Water Act, 1871, and they recommended that it should be amended to read as follows:—"Every water-closet cistern or water-closet service-box hereafter fitted or fixed in which water supplied by the company is to be used shall have an efficient waste-preventing apparatus so constructed as not to be capable of discharging more than *three* gallons of water at each flush." They also suggested that the requirements as to the supply of water to water-closets should apply equally to the supply of water to sinks used for receiving any solid or liquid filth, and also that a regulation should be made which would prevent cisterns being brought into use for supplying water for domestic purposes, or for food for beasts, so long as they directly supply any water-closet or sink used for receiving any solid or liquid filth.

With all these suggestions we have from time to time expressed our agreement, and so general was the opinion favourable to them at the inquiry, that we are surprised that the Inspector and the Local Government Board have not reported in a direction favourable to the proposed alterations. The Board is not prepared to alter the existing regulations so as to substitute three for two gallons as the maximum amount of water to be used as the flush of a water-closet. They see no objection to the regulations being amended so as to include in the definition of "water-closet" any sink used for receiving any solid or liquid excremental matter, but the Public Health Committee do not consider it worth while to ask the companies to make this one alteration.

In regard to the Council's third suggested amendment, the Board is advised that the suggested regulation in its present form is designed not for the purpose of preventing the pollution of water, but for the purpose of preventing the use of water that is liable to pollution, and does not therefore come within the scope of the regulations required to be made under section 17 of the Metropolis Water Act, 1871.

Another amendment suggested by the Council was that in all cases where any premises have a constant water service, one or more taps should be provided in connexion with the rising main for the supply of water for drinking purposes, but the Board has been advised that the suggested regulation is not one which they could make under section 19 of the Metropolis Water Act, 1871, and, although the water companies expressed their willingness to adopt this recommendation, the Public Health Committee of the Council are of opinion that it cannot be added to the regulations.

It is unfortunate that the inquiry has not resulted more favourably to the proposed amendments. In regard to the much-debated question of the proper flush for a water-closet, though the effect of a flush must depend largely upon the construction of a closet, the consensus of opinion appears to be in favour of a three-gallon flush. Most of the London Vestries endorse the view that the present flush is inadequate, and that opinion has been supported by such well-known experts as Dr. Sykes, Medical Officer of Health for St. Pancras, Dr. Parkes, Medical Officer of Health for Chelsea, Professor H. Robinson, Mr. T. Rogers Field, and Professor Corfield. It is not so much the question whether the flush will clear the closet basin and trap, but also whether it will clear the drain and be sufficiently strong to carry soil to the sewer. In some cases two gallons are no doubt sufficient for this purpose, but not in all, and for this reason we prefer a three-gallon flush for all closets. It has been stated that an increase of one gallon in the flushing capacity of cisterns would mean an increase in the water supply of 10,000,000 or 12,000,000 gallons daily, and in our opinion the decision of the Local Government Board has been based principally upon this consideration, and may thus be said to have been arrived at from a desire to benefit the Water Companies rather than the public.

THE LONDON COUNTY COUNCIL.

THE London County Council resumed its weekly sittings on Tuesday, after the Easter recess, at the County Hall, Spring-gardens, Sir Arthur Arnold, Chairman, presiding.

Loans.—The Council, on the recommendation of the Finance Committee, agreed to lend the Mile End Vestry 1,900*l.* to defray the cost of underground conveniences at Burdett-road; and the Poplar Guardians 2,800*l.* to defray the cost of the erection of new offices, workrooms, receiving wards, &c.

Arbitration in Building Contracts. — The General Purposes Committee brought up a report in which they stated that in a recent report to the Council on the subject of conditions of building contracts they submitted a new form of arbitration clause.* This clause was to provide for the appointment of an outside arbitrator, but only after the works were completed, and then only so far as the settlement of accounts between the parties was concerned. An amendment was moved for the purpose of removing this limit and of providing that any difference or dispute should, immediately it arose, be referred to an outside arbitrator. By leave of the Council both the motion to adopt the new form of arbitration clause and the amendment were withdrawn. The clause as it stands at present in the conditions of contract provides that any difference or dispute shall be referred to the award and decision of the architect of the Council as sole arbitrator. The Institute of Builders, by whom the question of this particular clause was raised in July last, suggested the appointment of an outside arbitrator. The following extract from the Committee's previous report shows the clause as it stands at present, and the alterations proposed by the Institute of Builders, the additions being in italics, and the words proposed to be left out being in brackets—

"XXVIII.—If any difference or dispute shall arise between *the architect or* the Council and the contractor with regard to this contract or the construction thereof, or the rights, duties, or liabilities of the contractor, or the *architect or the* Council under this contract [or as to any materials or workmanship], or any other matter or thing, or cause of difference whatsoever arising out of or in connection with this contract, or the execution thereof, directly or indirectly, *not being matters left to the sole decision of the architect during the progress of the works*, the same shall be referred to [the award and decision of the architect as sole arbitrator] *an arbitrator to be appointed under the provisions of the Arbitration Act, 1889*, whose decision shall be final and conclusive between the parties, and [the architect] *who* shall have power over the costs of any proceedings under this clause."

The report of the Committee proceeded as follows:—

"We have now to report that we have further considered the question of amending this clause, and in doing so have had reports thereon from the architect, engineer, and solicitor. These officers are practically agreed that it is inexpedient to alter the present form of arbitration clause, and after careful consideration we now concur in this view and for the following reasons. If a clause were adopted by which a contractor could have disputes upon all questions relating to materials and workmanship, in addition to the final settlement of

* See *Builder* for February 8, p. 118.

accounts, referred to arbitration, it would doubtless lead to confusion, litigation, and expense, and it would, in fact, be practically impossible to carry on works if a third party were introduced at any time at the request of the contractors. If the principle of an outside arbitrator is now conceded in building contracts, the Council would undoubtedly be pressed sooner or latter to concede it in engineering contracts, and it would be difficult, if not impossible, for the Council to resist. The engineer points out in his report that the present form of arbitration clause has stood the test of eighty or ninety years in most of the contracts for engineering works in Great Britain, that he himself has acted under that form of arbitration for the past twenty-five years, and that he has never known a case within his own experience where it has not worked to the perfect satisfaction of both parties to the contract. During the past six years the clause has only been varied twice. This happened once in the case of a contract with the Thames Iron Works and Shipbuilding Company for the supply of certain machinery for Crossness, and on that occasion the clause read as follows—

Lastly, if any difference or dispute shall arise between the Council or any of its officers and the contractors, either with regard to the construction or effect of the contract, specifications or drawings, or to the rights, duties, or liabilities of the contractors or the Council under the contract, or as to the due performance of the contract by the contractors, or as to any materials or workmanship, or as to any other matter or thing, or cause of difference arising out of the contract or the execution thereof, directly or indirectly, the same shall be referred to the award and decision of the Chairman for the time being of the Main Drainage Committee of the Council as sole arbitrator, whose decision shall be final and conclusive between the parties. The said Chairman of the said Committee shall have power over the costs of any proceedings under this clause.

It was thus varied at the special request of the managing director of the Company, but the experience of its working was of such a nature, that when the same firm subsequently entered into other contracts for the construction of the Barking-road bridge and of four swing bridges in the Isle of Dogs, the Council and the contractors reverted to the original form of arbitration clause. Another variation from established usage was made in the case of the Blackwall tunnel, in the contract for which it is stipulated that the Chief Engineer to the Council shall be sole arbitrator during the construction of the tunnel, but that when the works are completed the contractors may, in case of dispute, call upon Sir Benjamin Baker, who has hitherto advised the Council in the matter, to act as supreme arbitrator, *not* in matters of professional engineering, but in matters of outstanding financial claims. The contract for the Blackwall tunnel is, however, of so exceptional a character, that perhaps some modification of the original clause was desirable. The engineer, moreover, points out that the bills of extras which are at present made out by contractors under the clauses now in operation are sufficiently large, but under a clause by which an outside arbitrator could be called in at any time, they would probably be far larger. The adoption of such a clause would, in fact, reverse all the common-sense views which at present regulate the dealings of buyer and seller, and would practically amount to making the seller of the article master of the position in place of the purchaser, and that if an arbitrator is allowed to be introduced on to the works attaching to any contract during their construction, for the purpose of dealing with any questions as to materials or engineering, the Council must be prepared to pay for the same in the way of bills of extras, largely enhanced in value, on the termination of the works, and which neither the Council nor the engineer will be able to resist. The solicitor points out that the present system has worked well and that it has been the rarest occurrence that the engineer or architect has had formally to act as arbitrator at all. In fact, we understand that only one instance can be recalled during the last twenty-eight years. In all other cases the engineer or architect as such, and not as arbitrator, has succeeded in settling all matters of difference with the contractors in such a way as has not prevented the latter from tendering again under the same form of arbitration clause. The appointment of an outside arbitrator may perhaps be right and proper where the employers are private persons who may, in some cases at least, employ an engineer or architect of no high standing or great repute. The case, however, would appear to be very different where the Council is the employer, for it is almost inconceivable that the chief engineer or architect of a great public body like this Council should at any time be other than a gentleman of great ability and experience and of high integrity and honour, and one who, if left, as he should be, to exercise his duty of dispute preventer or arbitrator under the contract, without interference by the Council or its Committees, is practically certain, to the best of his judgment, to hold the scales even between the Council and the contractor, and do even justice between them, which from his greater knowledge of the matter in dispute he is even better able to do than an outside arbitrator. For the above reasons we now recommend—

(*a*) That no alteration be made in the present form of arbitration clause.

In our previous report an amendment of clause XIV. was also proposed. Although no objection was expressed to this clause, it was withdrawn as it formed part of the recommendation containing the proposed form of arbitration clause. We accordingly again recommend—

(*b*) That the following be substituted for clause XIV. in the present form of building contracts—

The whole of the materials to be used shall be new materials, unless otherwise specified, and shall be the best of their respective kinds, and should any materials be brought on the ground which the architect shall decide to be of an inferior description or improper to be used in the works the same shall be removed entirely away therefrom within twenty-four hours after orders have been given by the architect, and the aforesaid decisions and orders of the architect shall be final, and in case of non-compliance with any such orders the architect may cause the said inferior or improper materials to be taken away or otherwise dealt with as rubbish, without any payment or compensation to the contractor for the same, and the contractor shall, on demand, pay to the Council the expenses incurred by the Council in so doing, the amount thereof to be certified by the architect.

In the event of recommendation (*a*) being adopted, a consequential alteration in clause XVIII. will be necessary in the revised form of contract approved on February 4. We recommend—

(*c*) That the words 'except under an award made by the final arbitrator referred to in clause XXVIII.,' be omitted from the second paragraph of clause XVIII."

Mr. Roberts moved an amendment to refer recommendation (*a*) back to the Committee on the ground that the present system was unfair, seeing that the officials of the Council were called upon to decide disputes between themselves and the contractors.

The amendment, having been seconded by Mr. Antrobus, was, after discussion, adopted. Recommendation (*b*) was agreed to, but recommendation (*c*) was also referred back.

The Water-Supply Question.—The Council next considered the scheme for drawing water from Wales. To the first recommendation of the Water Committee, declaring it to be in the interests of London that the requisite augmentation of its supplies should be drawn from sources other than the Thames and Lea, Sir J. Lubbock moved an amendment to the effect that the introduction of the Government Water Bill rendered it inexpedient to come to any decision on the subject at present. This amendment was defeated by 56 votes against 52, and the following recommendations of the Committee were, after a protracted debate, agreed to :—

"(2) That the valleys of the Usk, the Wye, and the Towy with their tributaries furnish a suitable area from some part of which supplies might be derived.

(3) That the Usk and Llangorse section of the Welsh scheme, as set out in the above report, should be undertaken in the first instance."

On the following recommendation :—

"That the Water Committee be instructed to continue the surveys of the whole of the Welsh scheme, and to prepare such plans, &c., as are necessary in order to enable the Council to apply to Parliament in the session of 1897 for powers to carry out the Usk and Llangorse section of the scheme, together with the requisite conduit to London, and for powers to purchase such sites for reservoirs and such other rights as may be necessary in order to ensure that the other areas referred to shall remain available for the supply of the metropolis,"

Mr. Westacott moved the following addition, "and that it be referred to the Finance Committee to report to the Council at as early a date as possible the effect which the carrying out of the scheme will have on the rates of London."

This was adopted ; but after further discussion Mr. Dickinson (Chairman of the Water Committee) agreed to take back the recommendation, as well as the following :—

"That, subject to an estimate being submitted to the Council by the Finance Committee, as required by the statute, we be authorised to expend a sum of 10,000*l.* in relation to the above matter."

Holborn to the Strand Improvement.—The report embodying the Strand and Holborn improvement scheme was withdrawn, the Improvements Committee desiring to reconsider the whole matter.

The Council adjourned soon after seven o'clock.

ARCHITECTURAL ASSOCIATION SPRING VISITS.—We are asked to mention that the proposed visit to Mr. Alfred Gilbert's studio, announced for Saturday, the 25th, is postponed, in consequence of a communication from Mr. Gilbert, and that Messrs. Isaacs and Florence have kindly arranged for a visit to be paid to the Coburg Hotel, Mount-street, at 3 p.m. on the same date, instead of the originally intended visit.

LAUNDRY AND SANITARY EXHIBITION.—By an oversight we referred to this Exhibition (page 347, *ante*) as opening "on the 26th ;" it should have been "the 26th of August."

CRYSTAL PALACE COMPANY'S SCHOOL OF PRACTICAL ENGINEERING.

THE certificates gained by the students of the School of Practical Engineering, Crystal Palace, during the Easter term, were distributed on the 17th inst., in the lecture-room of this Institution, by Mr. A. T. Walmisley, M.Inst.C.E., and Engineer to the Dover Harbour Board.

Among those present were :—Mr. G. T. Rait (Chairman of the Crystal Palace Company), Mr. W. Gardiner (Secretary of the Company), Mr. J. W. Wilson (Principal of the School), Mr. J. W. Wilson, jun. (the Vice-Principal), and Messrs. J. E. Darbishire and G. Maxwell Lawford (the examiners in mechanical and civil engineering). The reports made by the examiners, which were of a highly satisfactory nature, were read by Mr. R. G. Hodson (Superintendent of the Crystal Palace School of Art, Science, and Literature), after which the Chairman delivered an address.

Mr. Walmisley said the Crystal Palace School was a technical institution, and was established in 1872 for the purpose of providing students in civil and mechanical engineering with thorough practical instruction in the rudiments of the profession and in the manipulation of materials. The Institution began with fifteen students, but it had since largely extended its work, and there had been as many as 100 students in the school at one time. At the present moment the number was seventy-one. The principal object of the work done in the school was to prepare students for the engineering profession by a system of combined practical and theoretical instruction, the course extending over a period of two years. That the school had done good service was evident by the positions which many former students at present occupied, and he thought it particularly gratifying to find that the old students were doing very useful work in their profession in all parts of the world. This, in his opinion, was largely due to the influence that had been exercised on them by Mr. J. W. Wilson, who had been the Principal all the time, and who had had altogether 1,172 students under his care. He was glad to hear that they had an entrance examination, which, though not competitive, was a test of the general educational ability of the candidates. The Institution of Civil Engineers also demanded a certificate of sound general education among all students they admitted. In his subsequent remarks, the Chairman said that by their examinations the students had shown that they possessed a certain amount of ability, but he desired to say to those who had no settled course of action before them as regards their future career, that if they wished to succeed they must not suppose that their work was perfect. Whatever our pursuits in life might be, no one could be said to have finished his education ; and, if that was true generally, as regards the engineer it was pre-eminently true. An engineer never finished his education, for new demands were made from day to day ; labour and material varied in different places, and what was suitable, for instance, in England, might not be suitable in the colonies, although general principles prevailed everywhere. Therefore, those who had gained certificates must not think that what they had learnt was incapable of improvement ; they must remember that all things were capable of improvement. It was very necessary, then, for an engineer to have an inquiring mind, though he should like to add that he did not mean an inquisitive mind, for there was a great deal of difference between the two. The true engineer must not rely too much upon the results obtained by others ; he must not, for instance, rely upon a formula without satisfying himself that the premises upon which that formula had been based were also applicable to the matter under review. An engineer might certainly consult standard works for rules and tables, but no true engineer would imagine that all he required to know was contained in Molesworth's well-known pocket-book. They must satisfy themselves that the formula they were going to apply was suitable to the case, for otherwise formulas would mislead them. He mentioned this because he found that young engineers had a tendency to trust to formulas or to the use of handy books like Molesworth's. It had been said that man was the creature of circumstances ; he would rather say, especially to engineers, that they were architects of circumstances, and that it was character that builds an existence out of circumstances. He might say that looks, actions, writings, and speeches, which made up a man's character, were too often agencies of demolition rather than edification. The examiner's report showed that they possessed ability, but they would never succeed unless,

associated with that ability, they had stability of character, and they might work very hard—and, as they knew, nothing was done without labour—and yet fail to succeed if they exercised too much their powers of reception and neglected their powers of reflection. That was the great element of success in any work. They should never be above acknowledging a mistake, but they should show by their subsequent work that they had profited by their mistakes and could rectify them. Upon all occasions they should let their conduct be marked by dignity, by impartiality, by knowledge, coupled with the ability to apply that knowledge when it was required, and if they did so they would become men of mark and worth.

At the conclusion of his address Mr. Walmisley distributed the certificates, the chief prize-winner being Mr. W. H. Blaker, who received the bronze medal of the School of Art, Science, and Literature, he having obtained during his course through the Engineering School the necessary nine certificates, none of which were below the third order of merit. The proceedings closed with votes of thanks to the examiners and the Chairman.

APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

AT the meeting of the London County Council on Tuesday, the Building Act Committee stated that they had considered the undermentioned applications under the London Building Act, 1894, and had arrived at the following decisions. Those applications which have been agreed to are granted on certain conditions :—

Lines of Frontage.

Strand.—That consent be given to the erection of an oriel window to the proposed new premises for the National Telephone Company, Limited, in the Strand, such window to abut upon Wellington-street, on the application of Mr. A. N. Bromley on behalf of the Company.

Battersea.—That consent be not given to the erection of buildings on the south side of Prince of Wales-road, Battersea Park, between Macduff-road and Forfar-road, and also abutting on Lurline-gardens, on the application of Mr. F. J. Pilkington, on behalf of Mr. H. Johnson.

Dulwich.—That consent be not given to the erection of three houses with shops on the north side of Woodwarde-road, Lordship-lane, on the application of Mr. J. H. Myring.

Hackney, Central.—That consent be not given to the erection of a one-story shop upon part of the forecourt of No. 6, Stamford-road, Kingsland, on the application of Mr. G. Parry.

Hampstead.—That consent be not given to the erection of buildings on the south-west side of Finchley-road, to abut upon a footpath leading to West Hampstead and adjacent to the Finchley-road Station of the London and North-Western Railway, on the application of Messrs. Arding, Bond, & Buzzard, on behalf of the Aylesbury Dairy Company, Limited.

Hampstead.—That consent be given to the erection of two-story oriel windows to five houses with shops on the west side of South End-road, and adjoining Margon-terrace, on the further application of Mr. C. Bell, on behalf of Mr. W. J. Jones.

Hampstead.—That consent be not given to the erection of a one-story addition in front of Hainault Cottage, Gayton-road, on the application of Mr. F. J. Potter, on behalf of Mrs. Coit.

Hampstead.—That consent be not given to the construction and erection of two bay windows to a house to be known as No. 10, Eaton-avenue, on the application of Mr. W. Willett.

Islington, North.—That consent be not given to the erection of one-story shops upon part of the forecourts of Nos. 121, 123, 125 and 127, Seven Sisters-road, on the application of Mr. W. Smith, on behalf of Mr. C. Edwards.

Marylebone, East.—That consent be given to the erection of an iron and glass shelter to the front entrance of No. 31a, Weymouth-street, on the application of Mr. L. W. Ridge, on behalf of Colonel E. Matthey.

Marylebone, West.—That consent be given to the erection of a bay window at the basement and ground-floor levels in front of No. 6, Hall-road, Maida Vale, on the application of Mr. D. Joseph, on behalf of Mr. A. Abrahams.

Mile End.—That consent be given to the erection of a one-story shop in front of No. 610, Mile End-road, at the corner of The Grove, on the further application of Mr. J. H. Bethell, on behalf of Mr. W. Gower.

Norwood.—That consent be not given to the erection of six houses on the east side of Knight's Hill, West Norwood, on a site southward of Durham-road, on the application of Mr. T. H. Bull, on behalf of Mr. J. Ray.

Norwood.—That consent be not given to the erection of eleven houses with bay windows on the north side of Lambert-road, and of four houses with shops on the west side of Brixton Hill, between No. 74 and Lambert-road, on the application of Mr. A. C. Clout.

Norwood.—That consent be given to the erection of four houses with shops on the west side of Brixton Hill, between No. 74 and Lambert-road, on the application of Mr. W. N. Dunn, on behalf of Dr. J. C. Pearce.

St. George, Hanover-square.—That no action be taken with respect to the erection without the Council's consent of a porch in front of No. 3, Berkeley-square; and that Mrs. A. Hall, who called attention to the matter, be informed of this decision.

St. George, Hanover-square.—That consent be given to the re-erection of a portion of the flank of No. 7, Great Stanhope-street, abutting upon Park-lane, on the application of Mr. T. H. Smith, on behalf of Mr. B. I. Barnato.

St. Pancras, North.—That consent be given to the erection of one-story shops upon part of the forecourts of Nos. 157 and 159, Dartmouth Park Hill, Highgate, on the application of Mr. A. S. Gover, on behalf of Mr. F. Carter.

Width of Way.

Woolwich.—That consent be given to the erection of a house on the north side of Plumstead Common-road, nearly opposite Plum-lane, and also to the erection of two houses on land at the rear of such house, abutting upon Plumstead Common. On the application of Mr. A. Hutton.

Bethnal Green, South-West.—That consent be given to the erection of a one-story shed in the yard at the rear of No. 356, Bethnal Green-road, and to abut upon Thomas's-passage, at less than the prescribed distance from the centre of that street; on the application of Messrs. Hovenden & Barber, on behalf of Mr. R. Hovenden.

Hackney, Central.—That consent be not given to the erection of a show-room over the one-story shops in front of Nos. 18, 19, 20, and 21, The Grove, Mare-street, on the application of Mr. S. L. Walters, on behalf of Mr. Leigenberg.

Southwark, West.—That consent be not given to the erection of dwelling-houses on the west side of Burman-street, London-road, at less than the prescribed distance from the centre of the street, and to exceed in height the width of that street, on the application of Messrs. G. Lansdown & Son, on behalf of Mr. D. S. Whitcher; it being considered undesirable to permit in this case any departure from the provisions of Section 13 of the London Building Act, 1894, and, moreover, it is deemed inexpedient to allow any portion of Edmond-court to be built upon.

Open Spaces about Buildings.

Hackney, South.—That the Council, in the exercise of its powers under Section 41 (1) (vi.) of the London Building Act, 1894, do not allow a modification of the provisions of that section with regard to open spaces about buildings so far as relates to the proposed erection of a two-story house with an irregular open space at the rear on the north side of Atherden-road, Clapton, between Alfearn-road and Rushmore-road, on the application of Mr. G. S. Garey, on behalf of Mr. W. Holbrook.

Islington, North.—That the Council do, in the exercise of its powers under Section 41 of the London Building Act, 1894, allow the erection of four one-story shops with basements on the east side of Mount Pleasant-road, Stroud Green-road, and without open spaces at the rear, on the further application of Mr. A. Bedborough, on behalf of Mr. W. Andrews.

Kensington (Detached).—That the Council, in the exercise of its powers under Section 41 (1) (vi.) of the London Building Act, 1894, do not allow a modification of the provisions of that Section with regard to open spaces about buildings, so far as relates to the erection of a block of residential flats on a portion of the grounds of Gordon House, Chelsea Hospital, Chelsea Embankment, with an irregular open space at the rear of the block, on the application of Mr. Delissa Joseph, on behalf of Mr. H. Lovatt.

Poplar.—That permission be given to the erection of a ten-stall stable, with lofts over, on the south side of Willis-street, adjoining the North London Railway, and without an open space at the rear, on the application of Mr. A. J. Sheffield, on behalf of Mr. J. W. Kelly.

St. Pancras, South.—That permission be given to the extension of an addition over the one-story building at the rear of Nos. 1 and 3, Euston-road, at the corner of Liverpool-street, on the further application of Mr. R. Willey, on behalf of Messrs. Reggiori Brothers.

Norwood.—That the Council do, in the exercise of its powers under Section 41 (1) (vi.) of the London Building Act, 1894, allow a modification of the provisions of that Section with regard to open spaces about buildings, so far as relates to the proposed erection of three shops on the ground-floor of an annexe to the Theatre Métropole, Coldharbour-lane, with an irregular space at the rear of two of the shops and no open space at the rear of the centre shop, on the joint application of Mr. W. G. R. Sprague and Messrs. Sachs and Woodrow, on behalf of Mr. J. B. Mulholland.

Line of Fronts and Width of Way.

Greenwich.—That consent be given to the retention of a shop and dwelling-house and a lofty brick boundary-wall which have been erected without sanction at less than the prescribed distance from the centre of Coldbath-street, a narrow carriageway leading from Albion-street to Albion-grove, on the further application of Mr. E. E. Wood.

Fulham.—That consent be given to the erection of houses on the west side of Munster-road between Colehill-lane and No. 1, Gowan-terrace, on the further application of Mr. J. G. Denton, on behalf of Mr. E. Saunders.

Kennington.—That consent be given to the erection of school buildings and a school-keeper's house, and also to the construction of a play-shed on the east side of Kennington-road, at the corner of Stannary-street, on the application of Mr. T. J. Bailey, on behalf of the School Board for London.

Strand.—That consent be given to the erection of a projecting porch to new buildings on the west side of St. Martin's-street, between Nos. 9 and 16, on the application of Mr. J. Cash, on behalf of Messrs. Macmillan & Co., Limited.

Wandsworth.—That consent be not given to the retention of a wooden shed which has been erected (without permission) in the yard of No. 102, Greyhound-lane, on the application of Mr. J. F. Robinson.

Poplar.—That the application of Messrs. H. Hooper & Co. for an extension of the period for commencing the erection of two dwelling-houses on the north side of Marsh-street, flanking upon British-street, Millwall, be granted.

Formation of Streets.

Clapham.—That an order be sealed and issued to Messrs. G. A. Wilkinson & Son, sanctioning the formation or laying out of a street, 40 ft. wide, for carriage traffic to lead from Dragmire-lane into Thornton-road, and the widening to 40 ft. of a portion of Dragmire-lane, on the application of Messrs. Webb & Dashwood. That the name Hydethorpe-road be approved for the new street.

Fulham.—That an order be sealed and issued to Mr. J. Clench, sanctioning the formation or laying out of two-streets, 40 ft. wide, for carriage traffic, to lead out of Distillery-lane, Fulham-palace-road, and the widening of a portion of that lane, and also sanctioning the adaptation for carriage traffic of an existing way, to be made 40 ft. wide throughout, leading to the Manbre Saccharine Works, on his application to the Council, on behalf of Mr. W. Marchment. That the names Elmdale-street and Playfair-street be approved for the two new streets, and the name Brandenburgh-road for the existing way proposed to be adapted for carriage traffic.

Hampstead.—That an order be sealed and issued to Mr. F. T. Binnington, sanctioning the formation or laying out of a street, 40 ft. wide, for carriage traffic, to lead from Constantine-road into Savernake-road, on the Agincourt-park estate, on his application to the Council. That the name Constantine-road be approved for the new street.

Woolwich.—That an order be sealed and issued to Mr. A. H. Kersey, sanctioning the formation or laying out of a street 40 ft. wide, for carriage traffic, to connect Ancona-road with Piedmont-road, on his application to the Council. That the name Congo-road be approved for the new street.

Cubical Extent.

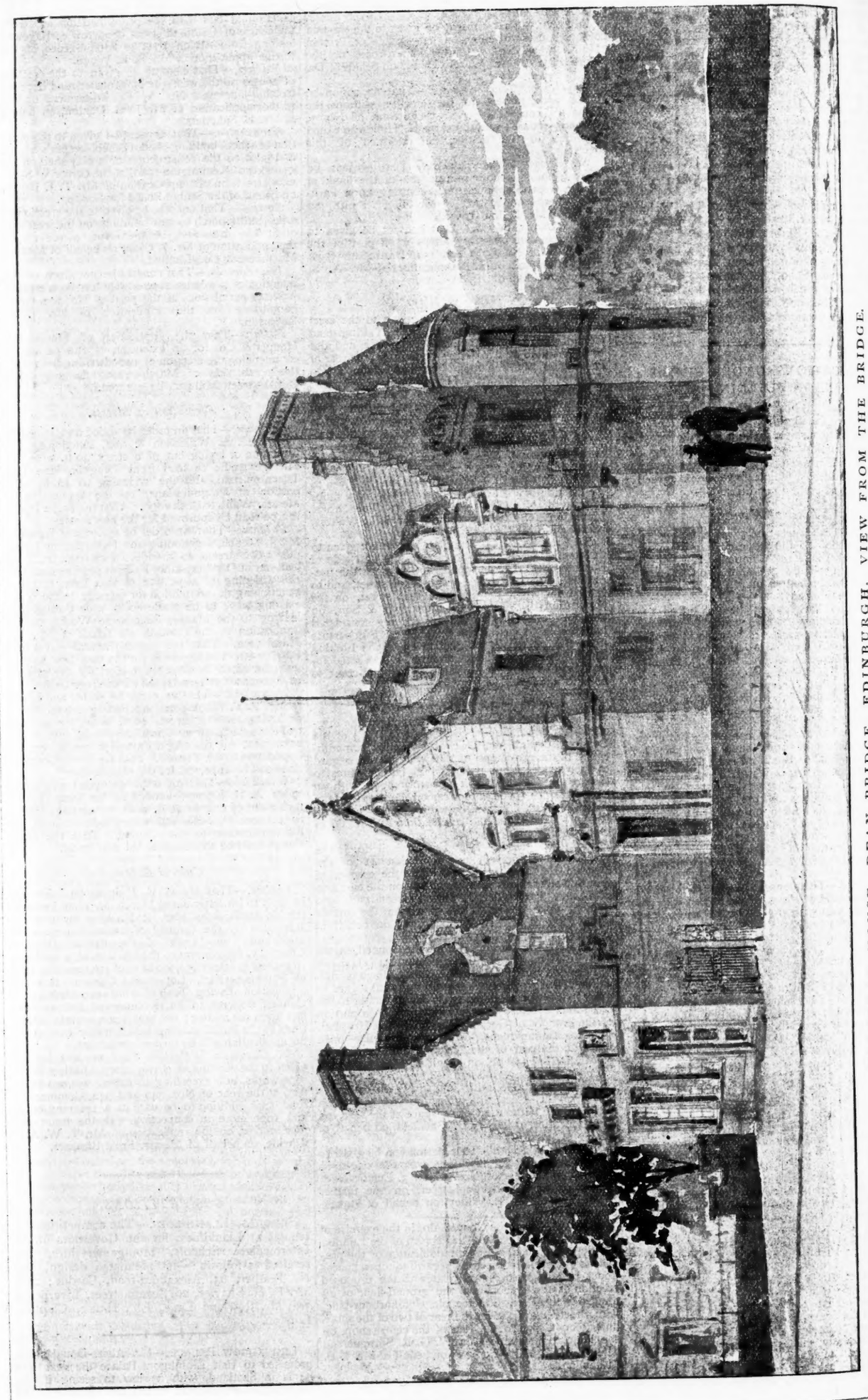
Chelsea.—That Mr. G. E. Holman be informed, in reply to his letter dated March 17, 1896, forwarding an explanatory plan, and asking for a reconsideration by the Council of its decision upon his application on behalf of the Refuse Disposal Company, for consent to the erection of a building to exceed in extent 250,000 but not 450,000 cubic feet, at Salopian-wharf, Lots-road, Chelsea, that his application having been further considered the Council adheres to its resolution of February 18 last upon the matter; but that upon certain alterations to the building being satisfactorily carried out his application will be further considered.

St. George-in-the-East.—That consent be not given to the erection of a two story addition to the rope works, now exceeding in extent 250,000 cubic feet, at the rear of Nos. 340 and 342, Commercial-road, such addition to be used as a spinning-house and rope store in connection with the trade of a rope maker, on the application of Mr. T. W. Aldwinckle, on behalf of Messrs. Frost Brothers.

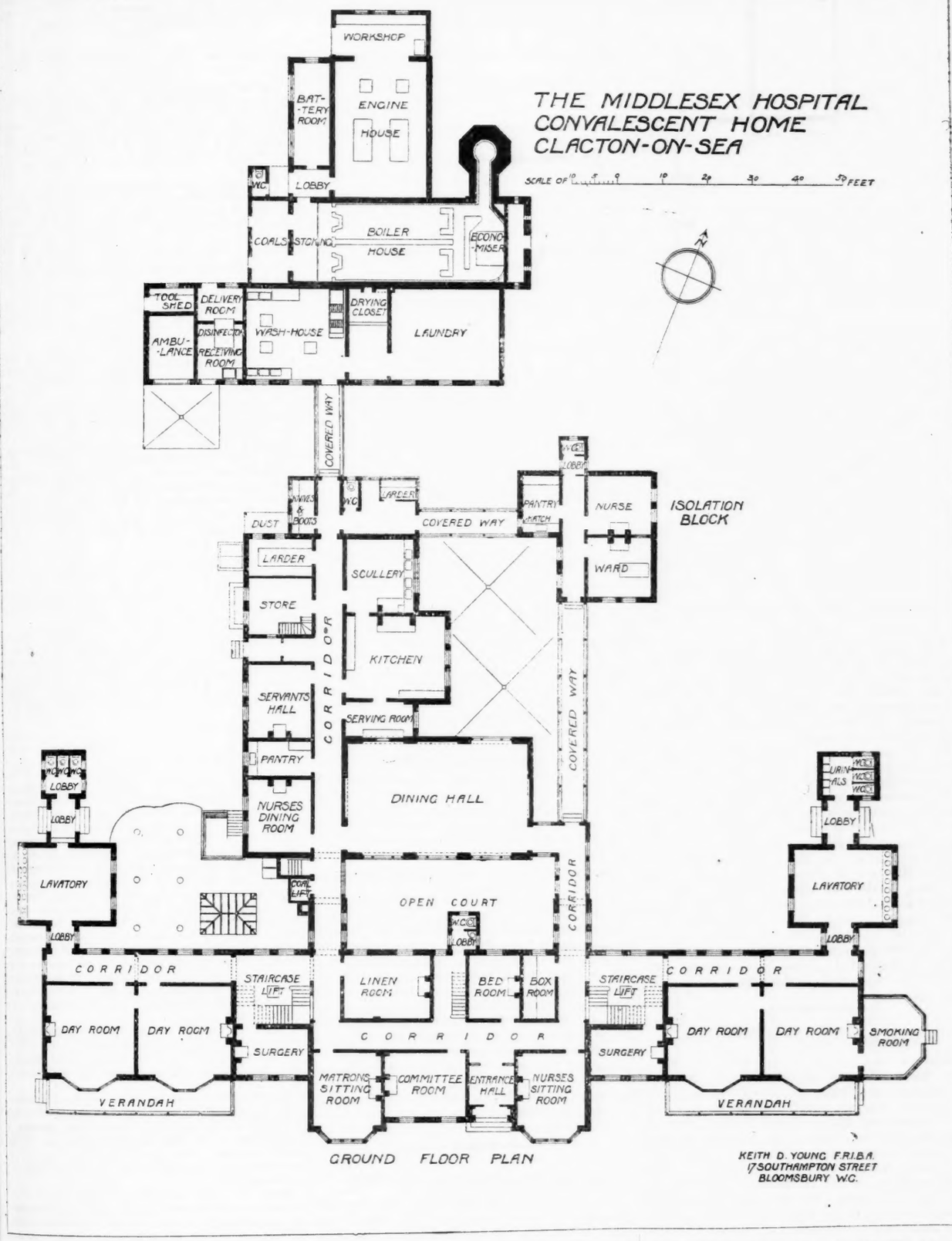
COMPETITIONS.

SCHOOLS, LLANIDLOES.—The competition for schools at Llanidloes, for the Governors of the Intermediate Schools, Montgomeryshire, has resulted as follows :—1st premiated design, Mr. H. Teather, 65, Alexandra-road, Cardiff; 2nd, Mr. F. H. Shaylor, 26, Severn-street, Liverpool; 3rd, Mr. Rowland Lane, Elm House, Clapton, London.

LINLITHGOW PALACE.—Mr. Akers-Douglas has promised to visit Linlithgow Palace the next time he is in Scotland, with a view to seeing if the Government expenditure in the maintenance of the building ought to be increased.



KIRKBRAE HOUSE, DEAN BRIDGE, EDINBURGH. VIEW FROM THE BRIDGE.



Illustrations.

KIRKBRAE HOUSE, EDINBURGH.

THESE illustrations show the present form given to an old house on the Dean Bridge, Edinburgh, by Mr. J. Graham Fairley. As will be seen, it is a house with a position of unusually and remarkably picturesque character; in fact, it is the combination of the house with its surroundings, as a bit of Edinburgh architectural scenery, which gives the main interest to it.

SKETCHES AT SIENA AND ORVIETO.

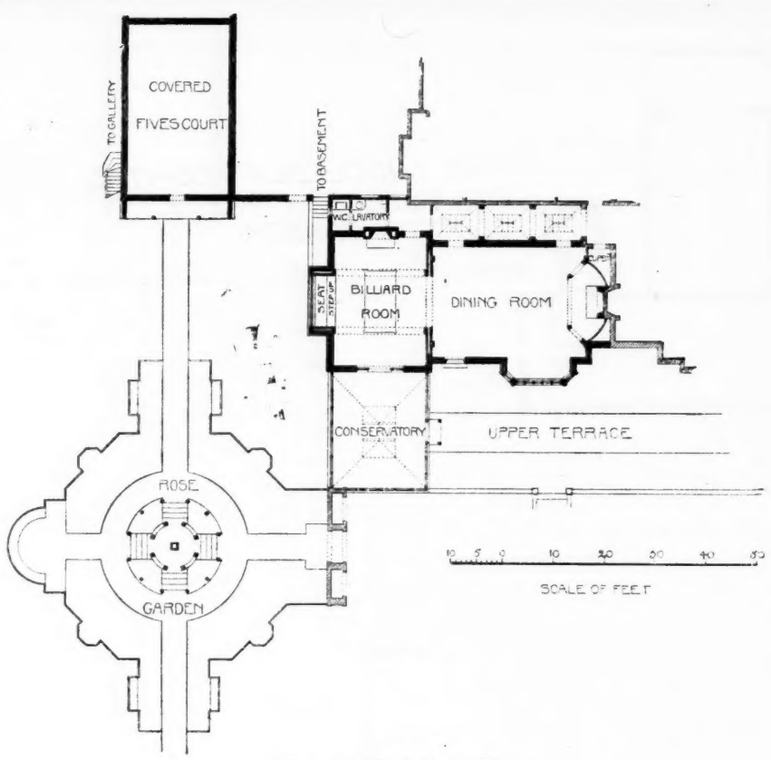
THE two sketches by Mr. Stewart form an interesting comparative study of the style of detail of the cathedrals of Siena and Orvieto, which have so much similarity in general idea and treatment that they are habitually classed together, and yet which show very decidedly the evidence of the half-century which lies between them, Siena having been founded in 1243, Orvieto in 1290. In the view in the interior of Siena Cathedral we see the trace of Romanesque still left on it, in the circular arches, the little moulding with the panel under it forming the "stilt" of the arch, the circular panels in the archivolt and the panelling in the soffit of the arch. In the doorway at Orvieto the feeling of the detail is more distinctly Gothic, the arch is pointed and built in recessed orders, and the detail, though there are classic reminiscences in it—see especially the broad acanthus-like leaves in the first and third arch-rings—is (for Italy) quite Mediæval in its general feeling and effect.

"BEARROC," BERKSHIRE.

THE illustrations of "Bearroc" represent addition to a house built by Mr. John Belcher some few years ago, consisting, as shown on the plan, of a dining-room and billiard-room, conservatory, and offices.

The rooms are elaborately finished in oak panelling, carved out by Messrs. Howard from Mr. Belcher's designs.

The contractors for the building were Messrs. Bottrill & Son, of Reading. The drawing was exhibited at last year's Royal Academy.



"*Bearroc*," *Berkshire. Plan.*

CONVALESCENT HOME, CLACTON-ON-SEA.

THIS home has been built for the benefit of patients in the Middlesex Hospital, London, and will form a seaside branch of that Institution. Accommodation has been provided for fifty-four patients from the wards with rooms for four nurses, who may either be convalescing after illness or who need rest and sea-air.

The dormitories are on the first and second floors and hold six beds each, two extra beds being provided in a ward for children.

The water-supply is from a well on the site, and the lighting is done by electricity, which is produced on the premises. The whole of the water is softened by Tyacke's process.

The contractors for the general work were Messrs. Everett & Sons, of Colchester; the plumbing work was done by Messrs. Dent & Hellyer; the hot-water work and the water softening and pumping by Messrs. Slater & Co.; the electric lighting plant was carried out by Messrs. Crompton, under the supervision of Mr. Adrian Collins, C.E. Mr. E. C. Wright performed the duties of clerk of works.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The ninth meeting of the session of this Association was held on April 1, but the attendance was so small, owing to it being the Wednesday before Good Friday, that it was decided to adjourn the business to the following meeting on the 15th inst., Mr. C. H. Compton, V.P., being in the chair. The tenth meeting of the Association was held at 32, Sackville-street, on the 15th inst., Mr. Compton, V.P., in the chair. The Hon. Secretary announced that it had been decided by the Council that afternoon to hold the forthcoming Congress at Peterborough, it being understood that an invitation from the Mayor and Corporation was about to be despatched. A very interesting collection of antiquities was submitted for exhibition by the following members:—Mr. A. Oliver, a large oak carving representing St. Barbara, believed to have been brought from a church in Holland. It is a half-length figure bright with colours, and bearing the usual attributes of that saint, the right hand holding a chalice and wafer, and on the left side a sword, point upwards, the date being presumably the fifteenth century. Dr. Winstone exhibited an apparatus for procuring a light in libraries. It is in the form of a single-barrel pistol with a flint-lock; the powder-pan is enlarged so as to hold tinder. The barrel was the receptacle for the matches, and can be closed by a flap acted upon by a spring; at the end is a small candlestick for holding a wax taper. The spark, which in a pistol would have ignited the powder, set fire to the tinder, and a light was obtained by the sulphur match in the manner usual before the introduction of lucifer matches. He also exhibited a medal struck in commemoration of the victory of La Hague, obtained by the combined fleets of the English and Dutch over the French, in 1692, found at Epping; and a seal of the time of Henry III., found in the moat of the Norman Castle, at Eynsford, which commanded a ford through the river Dorent. The seal is of soft metal. In a circle in the centre is a star of eight rays, ornamented by a border bearing the following inscription:—

✠ S'T. HVG' FIL' HAM' LENTECAK.

Seal of Hugh the son of Hamo Lentcake.

Mr. Geo. Patrick, hon. sec., exhibited two choice examples of old Battersea enamel, and, in the absence of Lady Paget, read her paper upon some ancient stone forts in Carnarvonshire. Dr. W. de Gray Birch, hon. sec., the Rev. H. J. Astley, Mr. Rayson, and others, took part in an interesting discussion upon this paper. Mr. Nichols submitted for exhibition a curious flask of earthenware of Dutch manufacture, found in a gravel-pit on his own property at Bromley, Kent. It is about 7 in. in length by 3½ in. in width, and the face is moulded representing the front of a house of two stories in the architecture of the seventeenth century.

ARCHITECTURAL SOCIETIES.

YORK ARCHITECTURAL SOCIETY.—On the 17th inst. a lecture entitled "Old York" was given in the Church Institute, York, by Mr. George Benson. The lecturer reviewed the notable events which have occurred in York since the time of the Brigantes, and paid particular attention to the progress of architecture in the city, as shown by its churches and other buildings. His statements were illustrated by limelight views. During his lecture he remarked that it was a pity that the law did not allow of old buildings in York being rebuilt in their original form when they became unsafe. At the conclusion a vote of thanks to Mr. Benson was unanimously carried. The Chairman, in putting the vote, said that the restoration of old buildings to their original form would not be adaptable to modern requirements. Mr. Benson suggested that only the fronts need be so restored, or the faces of the buildings might be preserved in a museum or some other suitable place, as was often done in continental cities.

Correspondence.

To the Editor of THE BUILDER.

OFFER OF COMMISSIONS TO ARCHITECTS.

SIR,—I enclose a circular just received containing an offer of commission for introducing custom.

The wording is ingenious, and *might* be construed into a mere offer of discount to the customer introduced, but I fear it would be difficult to persuade any "man of the world" to take this charitable view.

I find that some outsiders—"business men," of course—ridicule the idea of our members refusing an offered discount, maintaining that it is matter of common knowledge that such discounts are accepted. I can only say that I have personal knowledge of at least one cheque being returned to the tradesman who sent it, and no certain information of an opposite kind.

If there are black sheep in the Institute flock who encourage this sort of thing, is it not time that an example was made by expelling the offender, if irrefutable proof can be obtained?

At any rate, every architect can keep a black book of traders who offend, and the knowledge of this custom being common will probably soon check this offering of

BRIBES.

*** The circular enclosed by our correspondent is obviously intended as a commission to the architect for specifying the goods of the firm issuing it, though it is more cautiously worded than in some other cases that have come under our notice. As to the Institute, it has always declared its intention of expelling any member who is discovered to have accepted commissions of this kind, but of course these transactions are kept very quiet, and it is difficult to get evidence of them.—ED.

OLD IRON CHESTS.

SIR,—Could you or any of your correspondents kindly inform me if there exists any work of reference upon old *iron chests* and *coffers*?

I belong to one of the "City Guilds," and we have amongst our property an old iron chest of considerable antiquity. We have record that it was in existence in 1508, but it is thought by some to be much older. I shall be glad to receive any information in respect to the subject.—I am, yours faithfully,

F. T.

April 16, 1896.

STRENGTH OF BRICKWORK PIERS.

SIR,—In the correspondence of the past two weeks there seems to me to be a tendency to somewhat obscure and lose sight of the real question involved in the result of the recent tests of the Standing Science Committee of the Royal Institute of British Architects. I respectfully submit, Sir, that it is not so much a question as to whether the piers "have given way by shearing or by tension," as it is to ascertain, in a truly practical inductive fashion, the bearing capacity of piers up to the point of resistance at which fracture begins; such piers being built with material used in every-day practice and in the customary methods of construction; two conditions apparently adhered to in the carrying out of the tests. A factor of safety, necessary for the possible use of defective material and workmanship, follows as a natural corollary to the data already obtained.

The recent tests have conclusively proved that the closers and the multiplicity of vertical joints entailed in their use constituted the real inherent weakness of the piers tested, as shown by the following result:—

Pier No. 15—14 in. by 14 in.—in the diagrams of the "Journal" of the Royal Institute of British Architects, "proved fully 25 per cent. stronger in proportion to its area than the 18-in. pier." This pier, compared with the 18-in. pier, has 39½ per cent. less area, has no closers, and 55½ per cent. less vertical joints.

The practical question remaining now to be settled is, how to eliminate the sources of weakness, or reduce them to their lowest possible minimum, without adding to the present size of our bricks and the present normal cost of our brickwork. The mere changing of the closer from a position removed 4½ in. from the face of the pier to the outer face of the pier, suggested by a correspondent, offers, I submit, no solution to the question. To obtain the maximum strength at the minimum cost, the closer, where practicable, must be dispensed with, or its use reduced, as far as possible, consistent with good bond, which in practice spells strength. The failure of the piers in the line of closers was largely due to the absence of resistance to lateral thrust, or friction, an important factor in building.

F. WALKER

(Author of "Brickwork.")

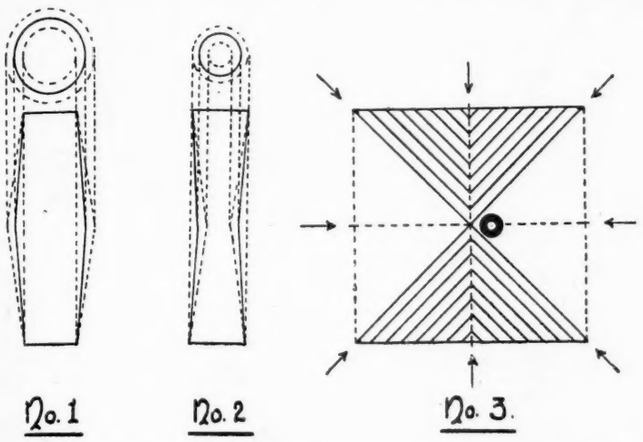
STABILITY OF COLUMNS.

SIR,—From Mr. Sanders' letter in your last week's issue I note that exception is taken to my illustration alluding to a bundle of fibres, which he con-

siders not a parallel case to a brickwork pier; or, I presume, in other words, that it would not be applicable to brick piers. Are we then to draw the inference that the nature of strains in a pillar vary according to the material of which it is comprised?

How can this possibly be, any more than that of a beam, which, irrespective of the nature of the material of which it is composed, will always have its top member in compression and lower in tension? Then he says that when bound together at their ends, the middle being left free, and placed vertically, it will bend outwards of itself, and then, when any weight is put on it, will simply increase the deflection. Quite so; it is only another illustration of my application. Granted that the material is capable of being fashioned into a column, I maintain that that will only take place when its height is very great in proportion to its diameter; too great, in fact, to be anything like suitable for practical application.

Further, that it bends outward, is this not only a natural law that the lesser of two forces where they are opposed must necessarily fail first? Then if the fibres had a camber inwards, they would naturally have a tendency to further deflection that way, when loaded. But let us refer to sketches and note the great difference in the strains that would be brought into force. It will be seen that they are directly opposite in character, with perpendicular sides (Sketch No. 1); failure means the disintegration of the particles. In the case where the sides camber inwards (Sketch No. 2) failure would mean absolute reduction of the particles by compression.



In Sketch No. 3, which is only Sketch No. 2 carried a step farther, I think that it will at once be seen to be the strongest possible form for an independent figure to support a load, the direction of the resultant of forces being perpendicular and equal in length to that of the base; failure would then only take place by absolute shearing at point O. But such a figure could not be looked upon as a column in the generally accepted sense, and, moreover, would be impossible to carry out in practice; to accomplish that it would be necessary to close the figure, then this would be nothing less than a perfect cube.

WALTER PERCIVAL.

The Student's Column.

CARPENTRY AND JOINERY.—XVI.

HINGING AS JOINTS USED IN JOINERY.

IN treating of this section of our subject the name is an evidence of its importance, for joinery is the art of joining and framing wood for the internal and external finishing of buildings. Newlands distinguishes carpentry from joinery by this, that while the work of the carpenter cannot be removed without affecting the stability of a structure, the work of a joiner may. Being of a finer description a much greater care and precision is required in joinery than in carpentry. Joinery then, as we understand it, is comparatively a modern art, the first evidences appearing in the pulpits, screens, thrones, and stalls of our Gothic cathedrals. In the earlier examples the work is of such a simple nature that it is surmised that the two crafts were then one, and that only in later times has the elaboration of fittings tended to separate them.

The first work on the subject was in 1677, quaintly entitled, "Mechanic Exercises on the Doctrine of Handy-works."

To proceed at once, however, to the consideration of joints in joinery, it may be mentioned that several of the most common of these have already been referred to under Article XIII. Floor coverings. Following the system of classification we have adopted throughout, joints may be roughly classed under

I. Joints between boards in the same plane.

II. Joints between boards meeting at a right angle.

III. Joints between boards meeting at other than a right angle.

IV. Joints between boards in which one is at an inclination to the horizon.

V. Joints for various purposes.

I. JOINTS BETWEEN BOARDS IN THE SAME PLANE.—By referring to Article XIII., such forms as the following are discussed: Plain or butt joint, rebated, rebated, grooved and tongued, ploughed and tongued, grooved and tongued, rebated and filleted, and dowelled, all of which are used in the laying of floors, and may be equally used in other positions for connecting boards in the same plane.

Match-boarding (fig. 186) consists of boards placed side by side, and fitting into each other by means of a groove formed in one board, into which a tongue formed on the adjoining board fits. The "quirked bead" is stuck on the angle of one board so that in shrinking the joint may not be unsightly, but forms a symmetrically shaped moulding.

V-jointed boarding (fig. 187) has the edge of each board chamfered and grooved, and a loose wooden tongue is inserted to keep each in position, the junction of the two chamfered edges forming a V on plan, hence the name.

Slip feathers are thin pieces of hard wood, such as oak, inserted into the length of the boards in grooves cut to receive them. For strength they should be cut across the grain, as otherwise they are liable to split along their length.

Mortise and tenon joints (fig. 188) are used in joiners' work similarly as in carpenters', the only difference being that they have to answer somewhat altered circumstances, and to be executed with the greatest regard to accuracy and finish. The joint is used in doors, and framing generally, and the tenon should be made about one-third of the thickness of the stuff on which it is formed; the width should not be more than five times its thickness, as, if more, it will be liable to bend. The dotted line shows a method of what is called "haunching" a tenon by leaving a projecting piece ½ in. to 1 in. in length, which gives the tenon greater strength to resist any side shock.

Double tenons (fig. 189).—This form of tenon, which the drawing sufficiently explains, is used in wide pieces of framing in order to weaken the style in which the mortise is framed as little as possible. Two tenons of comparatively small width do not shrink so much as one large one. This method is also used for the lock rail of doors, and is provided with a haunch between the tenons, which strengthen them.

II. JOINTS BETWEEN BOARDS MEETING AT A RIGHT ANGLE.—*a. Mitre-joints.*—The most common form of uniting two boards at an angle is shown in Fig. 190, known as the mitre-joint. Each edge is planed to an angle of 45 deg., and glued to the other. In order to make a stronger joint, a slip-feather is introduced, as in Fig. 191. In the case of boards of different thickness, which are often used in conjunction, the joint is effected as shown in Fig. 192, in which the mitre on the thicker stuff is formed on to the corresponding depth on the thinner stuff, the joint therefore being a combination of the mitre and simple butt joint. Fig. 193 shows another method in which one of the boards is rebated, and a small portion of each is mitred; this joint may be strengthened by screws each way.

In fig. 194 both boards are rebated and a slip feather inserted as a key. Figs. 195 and 196 are combinations of grooving and tonguing, with the last-mentioned joint; they are, however, seldom used.

In all these joints, the boards meeting at an angle, the slight opening at the mitre caused by shrinkage would be scarcely noticeable. When, however, two pieces of stuff butt against one another, a butt-joint being formed, it is evident that the shrinkage would cause an open joint. For this reason a bead moulding is run on the edge of one of the pieces as in fig. 197, where one board is rebated from the back and a bead is formed on the external angle of the abutting board.

Fig. 198 shews a joint in which a groove is formed on the inner side of one board, into which a tongue on the edge of the other fits. Fig. 199 is similar to the last except that a bead and cavetto is run on the internal angle of one board and a cavetto on the external angle of the abutting board, this would somewhat cover the shrinkage of the former board.

Fig. 200 shows a "quirked bead" run on the external angle of one board and the abutting board is simply rebated as shown. Figs. 201 and 202 show joints used in the formation of cisterns, in which for strength, one board is continued beyond the face of the adjoining board.

b. Dovetail joints.—In better class work, this form is used in in preference to a plain mitre joint. There are three kinds of dovetail; the common, the lapped, and the lapped and mitred.

The common dovetail is shown in fig. 203. It will be seen that the junction is formed by alternate projections and indentations of a dovetail shape formed on one piece of stuff which fit into corresponding spaces on the other. In the figure the pins and sockets respectively are marked *p* and *s*, and are seen alternately on each side of the angle. The strongest joint is when the pins and sockets are equal in width, but for cheapness the pins are often placed much further apart. Such a form of joint is used for the back angles of drawers, which do not show on the face. In hard woods, such as oak, the angle of the dovetails may evidently have more splay than in soft woods such as deal, where they would have a tendency to split off on any strain being applied.

The *lapped dovetail* is shown in fig. 204, in this the dovetails are seen only on one side, the front face not being interfered with, as this portion is not cut through by the dovetails. The joint is generally used for drawers or other pieces of joinery in which the front is desired to be kept plain.

The *lapped and mitred dovetail* is shown in fig. 205, it is used in cases where it is intended that the dovetails should not be visible on either side or on the top of the joint. About two-thirds of the joint is usually dovetailed, the rest being mitred as shown.

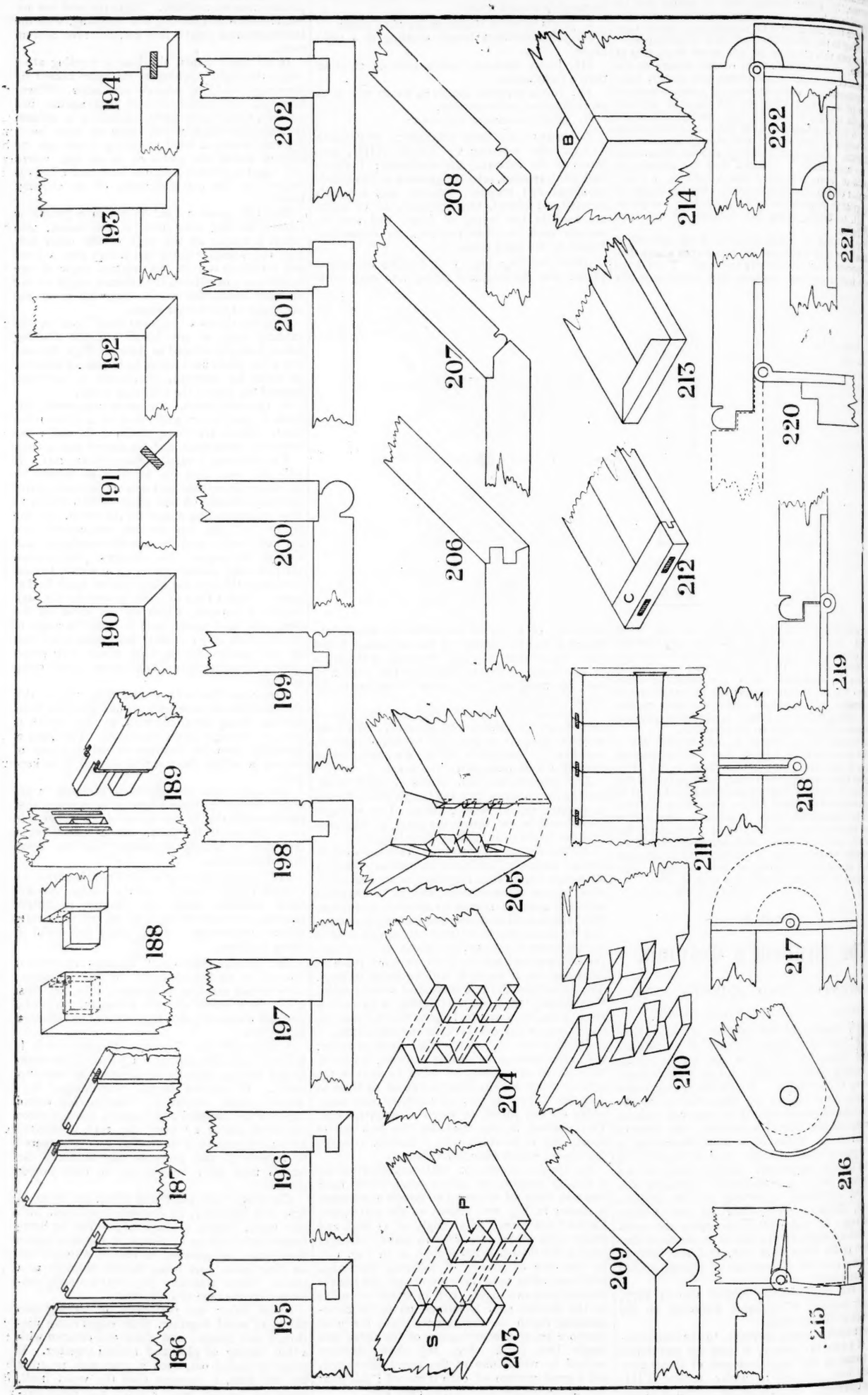
III. JOINTS BETWEEN BOARDS MEETING AT OTHER THAN A RIGHT ANGLE.—Figs. 206-209 show methods which are adapted to boards meeting at an obtuse angle, which will sufficiently explain themselves. Such joints are useful in many positions.

IV. JOINTS BETWEEN BOARDS IN WHICH ONE IS AT AN INCLINATION TO THE HORIZON.—In certain cases, as in hoppers, tubs, &c., such a joint as indicated above is necessary. It is of a dovetail character, and is performed as indicated in fig. 210.

V. JOINTS FOR VARIOUS PURPOSES.—It is evident that joints for various purposes, not mentioned above, have to be designed as occasion arises. In window backs, wall-linings, &c., where several widths of boarding are united together by ploughed and tongued joints, a piece of wood, called a "key" (fig. 211), is inserted across the grain in a dovetailed groove prepared to receive it, and prevents any tendency the boards may have to get out of their proper plane.

Clamping, both plain and mitre, are shown in figs. 212 and 213, in drawing-boards and such like cases, boards are kept in position by being framed into a clamp C, placed at the ends across their grain, and grooved to receive a tongue left on their ends, part being carried through as a tenon. Mitre clamping (fig. 213) is simply performed for the sake of appearance.

Glued Joints are performed by butting two pieces of wood together, their edges being previously well cleaned and dried and covered with a thin coating of glue and rubbed together. If properly carried out, such a joint with no other aid but glue, is stronger than the wood itself, while, on pressure being applied will crack any-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where but on the joint. Dovetail keys are placed across the grain, at the back of such boards.

A Glued and Blocked Joint is used when two boards meet at an angle, as shown in fig. 214, and when, in addition to being glued, a block (*b*) is inserted in the angle. This considerably strengthens the joint, which is much used in the construction of stairs, as will be explained under that section.

HINGING.

The hinging or hanging of doors, windows, shutters, and so forth to their frames can now be touched upon.

There are many types of hinges and many ways of fixing each type, in order to make them answer certain requirements; but in all considerable care and judgment has to be exercised for proper adjustment.

For the sake of clearness they may be divided as follow:—

Butts are used for ordinary doors and windows which have not to clear a projection. Fig. 215 shows the hinging of a door to open at a right angle. Butt hinges are made of wrought and cast iron and brass, the forming varying in size from 1¼ in. to 4 in. in length, the latter from 1 in. to 4 in. The size used in practice varies with the weight and importance of the door to be hung.

A Centre-pin Hinge is shown in fig. 216, permitting the door to open either way, and fold back against the wall in either direction. There are various other forms of centre-pin hinges, which need not be referred to.

Projecting Butts are used when a door, window, or shutter has to swing clear of a projection. Figs. 217 and 218 show a method of hinging employed when the flap, on being opened, has to be at a distance from the style, as, for example, in shutters in reveal, or pew doors, and the like, which have to be swung clear of the mouldings of the capping.

Rising Butts, which make the door self-closing and also cause it to rise clear of a carpet, consist in the hinge having a portion of a spiral thread worked on to it, which, on opening the door, causes it to rise as stated above. The weight of the door causes it to work down on this spiral thread and shut itself by gravitation.

The Back Flap or Shutter Hinge allows of the leaves folding back against each other. Fig. 219 shows the hinging of a back flap when the centre of the hinge is in the middle of the joint. Fig. 220 shows the manner of hinging a back flap when it is necessary to throw the leaf back from the joint.

H and H hinges are sufficiently explained by their name, they are used for common work and for such cases as ledged doors or where the stuff is too thin to screw butts on the edge.

Cross Garnets are in shape like the letter ⊢ placed on its side, they are used in the commonest form of external doors, and are generally about 12 in. in length.

Hook and Eye hinges are used for gates and heavy outside doors, the eye being formed on the portion which is secured to the door and which fits over the hook which is secured to the frame.

A Rule Joint such as is required for a shutter is shown in figs. 221 and 222. These can be used when the piece to be hung is not required to open to more than a right angle. In such a case the centre of the hinge is necessarily placed at the point of junction of the two pieces.

The division of our subject does not permit of describing or illustrating the elaborate specimens of wrought-iron hinges which form part of the door furniture of the Mediæval period, and which add so largely to the interest of the work of that period.

The following are the references to the illustration:—

186. Match-boarding.
187. V-jointed boarding.
188. Mortise and tenon joint.
189. Double tenon.
190. Mitre joint.
191. Mitre joint with slip-feather.
192. Joint between boards of different thicknesses.
193. Rebate and mitre joint.
194. Rebated joint with key.
195 and 196. Grooving and tonguing.
197. Beaded butt joint.
198. Beaded butt joint with tongue.
199. Butt joint with cavetto moulding.
200. Butt joint with quirked bead.
201 and 202. Joints used in the formation of cisterns.
203. Common dovetail.
204. Lapped dovetail.
205. Lapped and mitred dovetail.
206–209. Joints between boards meeting at other than a right angle.
210. Joint between boards, in which one is at an inclination to the horizon.
211. Boards ploughed and tongued and keyed at back.
212. Plain clamping.
213. Mitred clamping.
214. Glued and block joint.
215. Butt hinge.
216. Centre-pin hinge.
217 and 218. Projecting butt hinge.
219. Back flap hinge, with centre of hinge in middle of the joint.
220. Back flap hinge, with centre of hinge back from the joint.
221 and 222. Rule joint hinge.

GENERAL BUILDING NEWS.

NEW BUILDINGS FOR THE SURVEYORS' INSTITUTION.—We learn that Mr. Alfred Waterhouse, R.A., has been appointed architect of the new home of the Surveyors' Institution in Great George-street, Westminster.

HOLY TRINITY CHURCH, ROEHAMPTON. — On the 18th inst. the Duchess of Teck laid the foundation-stone of the new Church of Holy Trinity, Roehampton. Mr. Geo. H. Fellowes Prynne is the architect, and the tender of Mr. Arthur Porter, builder, was accepted, and the work commenced in November, 1895. The site is somewhat limited in length, being between the upper and lower school buildings, and having a considerable fall from east to west. The orientation of the church will not be quite due east and west, but nearly so. As the north and west sides will be those chiefly seen from the village roads the architect has placed the tower and spire at the lower north-west corner, and thrown out a double-gabled transept and apsidal-ended chapel on the north side, keeping the vestries, organ-chamber, and baptistry on the south side towards the common. The nave is 79 ft. 7 in. in length and 24 ft. in. width, and gives accommodation for 308. Aisles 12 ft. 6 in. in width are placed north and south, and a double transept 24 ft. wide by 31 ft. 6 in. long is thrown out on the north side. This transept forms the nave of the side chapel and gives accommodation for eighty persons. The chancel, which is to be divided from the nave by a lofty arch and screen, is 35 ft. 4 in. in length, and is the same width as the nave, and will give accommodation for a choir of forty. Broad passages are placed on either side of the chancel for the convenience of returning communicants. An apsidal-ended chapel is placed centrally at the east end of the north transept. Good-sized choir and clergy vestries and lavatories are placed on the south side of the chancel, with a heating chamber under it. A circular staircase leads from the choir vestry to the organ-chamber and parish-room over the vestry. A semi-circular baptistry is thrown out near the west end of the south aisle, being divided from the aisle by an arch which is filled with an elaborate stone screen. The nave is divided into five bays with spaces over the arches for future colour decoration, and two clearstory lights in each bay. Wall shafts carry the curved ribs of roofs. Spaces for future decoration are shown under two double-light west windows, and a rose window is placed high in the western gable. The chancel, which is well raised, has triplet arches on either side dividing it from the side passages, and above on the south side is a large open arch for a future organ case, which is intended to project slightly into the chancel. The sanctuary walls to the height of 10 ft. are shown to be faced with carved stone diaper work, and three panels above on either side are left for future colour decoration, and immediately over are placed two narrow lights. An elaborate traceried window is placed high in the east wall, leaving plenty of room for a dossal or dignified reredos. The nave and chancel roofs are of waggon form, and carried at one level throughout from east to west. Externally the church will be faced with Kentish rag stone, and internally with red and yellow brick relieved with stone. The dressings throughout will be of Corsham Down stone. The roof will be tiled. The amount of the present contract is 8,710*l.*, but this does not include the upper stages of tower and spire, or the baptistry. The total cost of the church when completed will be about 11,000*l.*

"THE FREE CHURCH," RICHMOND, SURREY.—This new church, in Ormond-road, was opened on the 16th inst. It stands on rising ground with ample space on all sides. The total cost of the works, including land, has been about 5,000*l.* The church has been erected by Messrs. Holloway Bros., of Battersea, from the designs and under the superintendence of the architect, Mr. T. Locke Worthington, of Westminster. The walls are of brick with buff terra-cotta dressings, as supplied from the Burmantofts Works. The vestibule and high dado round the church are of oak, and the little nave, measuring 60 ft. by 30 ft., is divided into three aisles by oak columns. There are two transepts, for organ and church-offices respectively, the latter being divided off by sound-proof screen. The church is heated by three Musgrave stoves, the flues being carried up to the highest points of the building with due regard to architectural effect.

HIGHER GRADE SCHOOL, BOLTON. — The memorial stones were laid on the 15th inst. of the Central Higher Grade Board School, Great Moor-street, Bolton. Mr. R. Knill-Freeman is the architect. A description of the building, and an illustration, appeared in our issue for March 7 last.

CORPORATION BATHS, SEABEACH, ABERDEEN. —The new bathing station erected by the Town Council of Aberdeen at the Seabeach will be opened on May 1. The plans were prepared by Mr. John Rust, jun., City Architect, and Mr. Ogilvie was inspector of works for the Corporation. The foundation and party walls are of Clinterly granite, and the external walls of compressed red brick from Ruabon, with white (firebrick) facings. There are sixteen bathrooms. The central ventilating tower rises to a height of 44 ft. above the ground level, and the refreshment-room measures 35 ft. 9 in. by 17 ft. 6 in. The total frontage is 111 ft., and the main block is 40 ft. by 35 ft. An open-air gymnastic ground adjoins, and in the old bathing-station a marine aquarium is to be introduced. The total cost is between 3,000*l.* and 4,000*l.*

SCHOOL, MAUD, ABERDEEN.—The new Central School at Maud, which has been built according to plans by Mr. George Sutherland, architect, Aberdeen, is approaching completion. The total cost of the building will be about 2,000*l.* The contractors have been: Mr. George Corbet, mason, New Pitsligo; Mr. Robert Chalmers, joiner, Old Deer; Messrs. Macintosh & Cannon, slaters, Peterhead; Mr. William Shand, plasterer, Peterhead; Mr. John Davidson, plumber, Peterhead; and Messrs. Masson & Sons, painters, Aberdeen.

HOTEL, SOUTHEND.—It is proposed to erect a new hotel on the hill above the Pier entrance, Southend. It has been designed by Messrs. James Thompson & Greenhalgh, architects, of Southend. The architecture is to be of the Castellated order. An extensive conservatory will extend along the whole of the south front of the building—a matter of some 288 ft. The roof of the building is to be laid out as a promenade. Provision is made for lighting throughout by electricity.

PARISH CHURCH ALTERATIONS, TOLLESHUNT KNIGHTS, ESSEX.—The church of All Saints', at Tolleshunt Knights, has just been reopened, after the building of a new porch, and other alterations. The porch has been rebuilt in oak on dwarf walls constructed of the best bricks of the old porch, which was a sixteenth-century one. The buttresses at the south and west of the building have been repaired wth new stonework. The drainage of the churchyard has been attended to, new rain-water pipes being provided to the roof, which has also been repaired to a considerable extent. The work of restoration has been carried out by Mr. W. Siggers, of Kelvedon, under the direction and from the designs of Mr. E. J. Dampier, of Colchester.

RE-OPENING OF BARNINGHAM PARVA CHURCH, NORFOLK.—The nave of the parish church of Barningham Parva has just been re-opened after restoration. The church is an Early English building. It consists of chancel, nave, and square battlemented tower. The chancel was restored in the year 1879. Plans of the present restoration were furnished, and the work superintended, by Mr. Herbert J. Green, architect and Diocesan Surveyor, the work being executed by Mr. R. Chapman, of Hanworth. The north wall has been taken down and built anew upon stable foundations; and a new plain open roof of pitch pine corresponding with that of the chancel has been supplied. The south wall, porch, windows, and buttresses have all been treated within and without, and the floor has been relaid in the passages with red and black tiles; while under the seats block flooring has been used. An oak pulpit, on a pedestal of stone, has been given by the present Earl of Orford, as a patron of the benefice.

PARISH CHURCH HALL, ELGIN.—It is proposed to erect a new Parish Church Hall, Elgin. The main entrance will open into a vestibule, from which two doors give access to the large hall; and on the right a staircase leads to the gallery. The large hall will measure 61 ft. by 39 ft. and 25 ft. high, and will be lit by five windows on the east side and three on the west, the platform being placed at the north end, with a window in the gable above, and another large window pierces the gable behind the gallery. Immediately behind the main hall and communicating by doors is the small hall, measuring 32 ft. by 22 ft. Adjoining are ladies' and gentlemen's cloak-rooms, lavatories, &c. Connected with the main hall, with a passage between, is the committee-room, 25 ft. by 19 ft., with a separate entrance from outside. The large hall will accommodate 540 persons, and the gallery 150, in all 690, while the small hall will be seated for 150 and the committee-room for about seventy. The cost of the building will be between 1,700*l.* and 1,800*l.* The architects are Messrs. A. W. Reid & Wittet.

FREE LIBRARY, ABINGDON.—The Free Library at Abingdon, which has been erected in High-street, has just been opened by the Right Hon. the Earl of Abingdon. The premises have been erected from the designs of Mr. J. G. T. West, architect, of Abingdon. The front elevation is in the Queen Anne style, and the red brick is relieved by stone dressings and timbered gabled bay windows on the second floor, with a pair of French doors and a balcony over the central entrance, surmounted by a stone canopy. The front part of the ground floor is occupied by two shops, having separate entrances, and between these there is a separate central entrance to the Library, leading through a corridor to the central hall, in the rear of which is the news-room, where stand-accommodation is provided for twenty daily and weekly newspapers. This part of the building is of one story, with glass roof, and is fitted, as are other parts of the building, with incan-

descent gas lamps. Adjoining the central hall, on the west side, is the lending library, affording space for some 5,000 volumes. This department and the reference library will be opened later. On the second floor, above the shops and central corridor, is an apartment, 38 ft. by 20 ft., to be fitted up for the reference library. The walls of this room are decorated with the arms of Abingdon institutions and benefactors. The coats-of-arms are illuminated upon stone corbels, in the form of shields, and are those of Christ's Hospital, the Borough of Abingdon, the Abbey of Abingdon, Sir John Mason, John Roysse, Sir John Golafre, Tesdale, and Richard Curtain. There is a third floor above, comprising rooms for the librarian and caretaker. The whole building is heated by hot water.

NEW TECHNICAL SCHOOLS, BATH.—The northern wing of the new municipal buildings at Bath, appropriated as technical schools, was opened on the 14th inst. by the Right Hon. Sir William Hart-Dyke. The wing corresponds in external design with the southern wing of the Guildhall. The building, which cost 30,000*l.*, was commenced about eighteen months ago. It comprises four floors. In the basement are workshops for plumbing, painting, and woodwork, and laboratories for electrical and mechanical investigations. The rooms on the ground-floor include a large lecture-room with seat accommodation for 240, fitted with appliances for scientific and other illustrated lectures, a smaller lecture-room, a library or students' room, the office of the director of studies, and a lecturer's room. The first-floor is devoted to the School of Art, and comprises a suite of rooms for elementary and advanced art, a modelling-room, and the art-master's room; there is also a drawing-office for draughtsmen in mechanical, building, cabinet, or other trades, and a small class-room for general subjects. The second-floor contains the rooms of the domestic department, comprising a demonstration-room for cookery, a kitchen, scullery, laundry, dressmaking-room, and a private room of the head mistress. The chemical and physical laboratory is on the same floor. The laboratory is arranged for twenty-four students in chemistry, and for the same number in physics. A balance-room, dark-room, and storeroom lead out of the laboratory. There are also two classrooms for general subjects. Mr. J. M. Brydon, of London, was the architect.

NEW EMPIRE PALACE THEATRE, GLASGOW.—The plans of the new Empire Palace Theatre, Glasgow, which is to replace the old Gaiety Theatre in Sauchiehall-street, were before the Glasgow Dean of Guild Court on the 16th inst. The exits and entrances remain as before, but a new elevation towards Sauchiehall-street has been necessitated by the insecurity of the walls in that part. Built to a height of four stories, the building is surmounted by a large central dome. Beneath this dome, which is flanked by a couple of turrets rising from the first story, is the pediment. Underneath this, again, is the main doorway, semi-circular topped, and with a verandah running above it; whilst a few yards to the west is the stage-door. The roof of the new theatre is a raised one, and lantern-topped, and has a dome similar to that in the centre at its north-west and north-east angles. Mr. Frank Matcham is the designer of the new building.

BUILDING PROGRAMME, ABERDEEN SCHOOL BOARD.—The Scotch Education Department has declined to relieve the local School Board of the responsibility of deciding as to the order in which the building schemes should be carried out. The total cost of the programme is estimated at 45,000*l.* It embraces (1) a new school at Kittybrewster, (2) a new school in Westfield district, (3) enlargement and remodelling of St. Paul's-street school, (4) enlargement and remodelling of Hanover-street school, (5) a new school at Old Aberdeen. The Department has just approved of the plan of the proposed Westfield school, prepared by Mr. A. Marshall Mackenzie, A.R.S.A., Aberdeen. The Finance Committee of the School Board also recommend that Mr. Mackenzie be instructed to prepare plans of new offices for the Board, with a frontage of 50 ft., on the site acquired in Union-terrace.

PREMISES, LEEDS.—The first of the new buildings erected on the ground occupied by the Central Market, Leeds, which was destroyed by fire a few years ago, is now completed. The premises occupy the northern portion of the site, having a frontage of 34 ft. to New Market-street, one of 84 ft. to Central-road, and one of 50 ft. to Back Central-road. Advantage has been taken of the opportunity which the demolition of the old market presented to widen and round-off the roadway opposite the Corn Exchange. The elevations of the building are faced with pressed bricks, relieved with cleansed stone dressings. There are three floors above the ground, and the total floor area is 1,550 square yards. The building has been erected from designs prepared by Messrs. Ambler & Bowman, architects, Leeds, and the work has been carried out by Messrs. Wm. Nicholson & Sons, Messrs. Dyson, Mr. Stephen McFarlane, and Messrs. E. Oldroyd & Co.

TECHNICAL SCHOOL, TAUNTON.—New technical school buildings, adjoining and forming part of the Huish School, Taunton, have just been opened. The new building is of red Wellington brick, and is in style in accordance with the other portion of the school. It contains a lecture-room 30 ft. by 20 ft.; a laboratory 27 ft. by 20 ft.; and a work-room 25 ft. by 20 ft. These are connected with the old portion of the school by a corridor. Under the work-room there are store-rooms in connexion with the laboratory and arrangements for heating apparatus. The whole of the buildings are warmed by hot water. The roofs are covered with Staffordshire tiles. Over the laboratory there is a lantern for lighting and ventilation. Fresh air is introduced at various points of each room by means of Boyle's inlet ventilators. Mr. J. H. Spencer, of Taunton, was the architect; Mr. G. H. Pollard, of Taunton, was the contractor for the building; and Mr. Morse, of Taunton, was the contractor for the special fittings.

FOREIGN.

FRANCE.—Amongst the numerous exhibitions now open to the public may be noticed the works of the late François Laugée at the Galérie des Artists Modernes, and the paintings of M. Pissarro at M. Durand Ruel's.——On Sunday last, at St. Ouen, the hospital of the Invalides du Travail was inaugurated. The architect is M. Joly.——A church erected by public subscription has just been inaugurated in the park at St. Maur.——On Sunday last at Villeneuve-Saint-George a new Hôtel de Ville and a Palais de Justice were inaugurated.——M. Godebski, sculptor, has been commissioned to execute a monument to the memory of General Le Flô, late Minister of War. The monument is to be placed at Lesueren (Finisterre). A bronze statue of Le Flô on a granite pedestal, on which are four bas-reliefs representing the principal civil and military episodes in the General's life, will be the design of the monument.——The Paris Municipal Council has just decided to carry their main outfall sewer as far as Triel and Mery-sur-Oise. The cost of this great work will be about 6,080,000 francs.——The monument to the late President Carnot has just been completed at Nancy. It is the work of three Nancy artists, MM. Bourgon, Prouvé, and Vallin. Besides the statue of Carnot there is a remarkable group, symbolising Peace and Force.——The jury on the open competition for the building of a new "Faculté des Sciences" at Marseilles has awarded the first prize to M. Blavette, the second to M. Bruno Pelissier, and the the third to M. Paul Normand, all three Paris architects.——The general assembly of the "Association provinciale des Architects français" will be held at Rouen, during the first fortnight in July.——The Champ de Mars Salon was opened on Thursday last, the 23rd inst., by the President.

NEW YORK.—At a special meeting of the New York Chapter A.I.A., held March 30, 1896, to consider the questions relating to high buildings, it was resolved that the Chapter fully approves of the passage of the law limiting the heights of buildings in New York City, known as the Pavey law.——Gen. C. H. T. Collis, Commissioner of Public Works of New York City, has created a Board of Engineers, to whom will be submitted all plans and petitions for establishment and change of grade. No recommendations will be made by the Commissioner of Public Works to the Board of Street Improvements until approved by this Board.——The Improved Housing Council of New York City has issued through its Committee on Model Apartment Houses a circular to architects inviting them to submit plans for blocks of model apartment-houses in conformity with specifications designed to improve the home conditions of labouring-men.

MISCELLANEOUS.

CITY IMPROVEMENTS, MANCHESTER.—Improvements are in progress in various parts of Manchester. According to the *City News*, they include new buildings for banks, assurance companies, offices, warehouses, shops, and works. First with regard to Cross-street. The latest addition to the architecture is the fine stone building for the Alliance Assurance Company, at the corner of King-street. Immediately adjoining in King-street is the extension of the offices of the Prudential Life Assurance Company. The building is of terra cotta, and it extends into Tib-lane and round by Essex-street. Cross-street is about to be widened at a point opposite the Conservative Club by taking down the railings in front of Cross-street Chapel, and this improvement also includes the widening of Chapel-walks by the addition to the street of the vacant land belonging to the Chapel trustees. With regard to the remaining portion of the graveyard at the back of the Chapel and abutting upon Cheapside the trustees have intimated to the Improvement and Buildings Committee that they see no objection to it being laid out as an open space. In Deansgate the most recent additions comprise the John Rylands Memorial Library; the new Inland Revenue Offices, opposite the School Board Offices; and a branch bank near Knot Mill Market. The work of the new Knot Mill Railway Station, a much needed improvement, is making rapid progress. In the near future the scheme of the Great Northern Railway Company will no doubt be entered upon, and a vast change be made in the locality. The proposal is to provide a goods station, and among other things erect a range of buildings in Deansgate, with shops on the ground floor, extending from Peter-street to Bridgewater-street. Deansgate is also to be widened at that point. New warehouses or offices have been or are being built in Whitworth-street, York-street, Dickinson-street, Spring Gardens, Brown-street, Pall Mall, Withy Grove, Julia-street (Strangeways), and Long Millgate. Already the goods traffic along Whitworth-street is very heavy, and it is likely to increase as time goes on. On that account it does not seem the most desirable place either for the new Municipal Technical School or the Central Board School, which is to replace the building in Deansgate. An important branch of the Manchester and Salford Savings Bank is being built on Ardwick Green, at the corner of Mawson-street, and new branches of other banks are also being provided in Brunswick-street (opposite Owens College), Hyde-road, Wilmslow-road, and Withy Grove. There is also great activity in the building of dwelling-houses, especially on the north side of the city. The improvement round about the Cathedral will be finished a few months hence. The hoarding on the Fennel-street side has been taken down and the footpath flagged. The intention is to have grass plots within the new boundary wall, and walks, and the Corporation have undertaken to keep the greensward in good condition. There are to be no trees or shrubs planted. The improvement will be a great one, judging from what has been done in Fennel-street. By agreement between the Cathedral authorities and the Corn Exchange Company on the one side, and the Corporation on the other, Half-street is to be made 10 yards wide from Fennel-street to Hanging Ditch. The Corn Exchange buildings are to be extended, and most of the property along Half-street has been vacated and is about to be demolished to make way for the extension and the wider street. On the south side of the Cathedral and along the front in Victoria-street the path is being set back to the new road line. Under the new Bill of the Lancashire and Yorkshire Railway Company extensions are to be made in and around Victoria Station. A new road is to be made from Shudehill, at a point opposite Smithfield Market to Long Millgate, and Long Millgate near Miller-street is to be widened. There are also other street improvements. The Corporation propose at a favourable opportunity to widen Cannon-street and Church-street up to Tib-street, which with the improvements in Hanging Ditch will mean a broader thoroughfare to Market-street and to Victoria Railway Station.

THE BAMBRIDGE ESTATE.—This estate, between Southampton and Winchester, is to be offered for sale by auction in June. The house, it may be noted (a mansion in the Italian style) was designed by the late Sir Digby Wyatt.

OLD SHEFFIELD FIREPLACES.—A meeting of members of the Sheffield Art Crafts Guild was held on the 15th inst. in the Montgomery Hall, to hear an address by Mr. Charles Green on "An Englishman's Fireside." Mr. T. Swaffield Brown, Master of the Guild, presided. In the course of his lecture Mr. Green mentioned the chimneypiece in Conisborough Castle, which dated back to about 1200, and described the quaint overmantel, containing the arms of the Talbots, in the principal living-room of the lodge at the Manor, where Mary Queen of Scots was imprisoned; and then spoke of the fine examples of chimneypieces in the Elizabethan style in Sheffield and the neighbourhood, paying attention particularly to the examples at Haddon and Hardwick Halls. He also referred to a mantelpiece in Beauchief Hall, which was a beautiful example of the Elizabethan period, and also to a chimneypiece at Carbrook Hall. He further described interesting fireplaces which had existed in the Thatched House in High-street, and in the old house at the Hartshead, which were undoubtedly designed and carved by some of the men who worked at Chatsworth. Other fireplaces referred to were in old houses in Tudor-street, which had been demolished; in the Weights and Measures Offices in Tudor-place; in the offices of Mr. Charles Hadfield, in Norfolk-street, once the old Club House; in the office of Mr. Charles Harrison, in Carver-lane; in the jeweller's shop at the top of Cambridge-street; in his (the lecturer's) own studio, &c. Coming to the period from 1800 to 1851, a period when probably every style of artistic work was introduced into Sheffield trade, good, bad, and indifferent, he said that during that period there lived a number of craftsmen in Sheffield who did excellent work in the various branches of Sheffield trade:—Edward Law, Major Morton, Ackroyd, Nevill, Jobson, Mindom, George Wright, William Ellis, Stevens, Sykes, and numbers of others. He regretted that the historians of Sheffield, in giving the history of the old worthies of the place, had neglected to give due recognition to numbers of these men, who had done such beautiful work and upheld the high artistic reputation of Sheffield, and who had not received the remuneration to which they were entitled. Illustrations of the principal fireplaces described were shown on a screen. A cordial vote of thanks to Mr. Green was passed.

ARCHITECTURAL ASSOCIATION. DISCUSSION SECTION.—The last meeting of the Session was held on Wednesday at 56 Great Marlborough-street, Mr. A. Satchell presiding, when the following mem-

bers were elected to form the Committee for 1896-7: Chairman, Mr. W. Pywell; Vice-Chairman, Mr. Matt. Garbutt; Hon. Secs., Messrs. H. J. Leaning and W. B. Hopkins. Of the paper and discussion on the occasion we will give a short report next week, space not being available in this issue.

DARTMOUTH BUILDERS AND THE BY-LAWS.—The monthly meeting of the Dartmouth Town Council was held on the 13th inst. A meeting of the whole Council in committee, held on March 16, dealt with the objections raised by the builders' deputation to the proposed by-laws. They directed the Town Clerk to write to Mr. F. J. Voisey, as representing the builders, and inform him that the Council cannot see their way to modify the by-laws in any of the points referred to. They desired to point out that as all the points referred to have been already considered by the Local Government Board, who had refused to sanction any of the proposed alterations, the Committee are of opinion that if they were prepared to adopt the builders' suggestions, the Local Government Board would still refuse their sanction. At an adjourned meeting, held on March 20, Messrs. J. Voisey, F. J. Voisey, and Pillar attended to represent the builders. After hearing their observations, the Committee saw no reason to vary their recommendations of March 16. —Mr. Back moved that the report be not adopted, and spoke very strongly against the proposed by-laws, which he said were very unsuitable to a hill borough like Dartmouth. Mr. Ditcham seconded. A lengthy discussion followed, in which Mr. Emmett moved, and Mr. Ellis seconded, that the report be adopted and acted upon. After further discussion the matter was put to the vote, when the result was that the by-laws were finally adopted by eleven votes to four. The clerk was directed to take the necessary steps to get them into operation.

AMATEUR PHOTOGRAPHERS AND THE NATIONAL GALLERY.—In the House of Commons, on Monday, Mr. Hanbury, in reply to Mr. Fardell, said: Permission is granted to professional photographers for the photographic reproduction of the pictures, because it is in the interest of the public that the national collection should be brought by means of photography before the public. No such end would be served by the admission of amateur photographers, who would cause additional inconvenience in the gallery, already, as it is, in many parts greatly overcrowded with students.—Mr. Brodrick, replying to Dr. Farquharson, said that a portion of St. George's Barracks would be vacated in about two years time, and it would be handed over to the Office of Works for such extension of the National Gallery as was contemplated. The building which remained would still be used as a recruiting place until it became necessary to extend the National Gallery. Care would be taken to so disconnect the remaining portion of the building from the National Gallery as to prevent any risk of damage to the pictures from fire.

CAPITAL AND LABOUR.

THE LONDON BUILDING TRADES.—The men employed in the London building trades have decided to come out on strike on May 1 for an advance of wages amounting to ½d. an hour and a new code of working rules. Notices to this effect have been received from the bulk of the trade by the Central Association of Master Builders, but with the exception of the Operative Bricklayers' Society, which sent in a notice five months ago, and the notice from the Plasterers' Society, received three months ago, the notices have been received within the last week or two. Among the demands made by the men is that by the painters for five minutes for washing their hands. According to the latest figures published the trade unions affected, as far as their London branches are concerned, and the number of men in each, are as follows:—Operative Bricklayers' Society, 6,300; Amalgamated Society of Carpenters and Joiners, 5,800; General Union of Carpenters and Joiners, 2,700; Perseverance Society of Carpenters and Joiners, 500; Associated Carpenters and Joiners, 345; National Association of Operative Plasterers, 2,763; Amalgamated Society of House Decorators and Painters, 752; United Operative Plumbers' Association, 925; Mill Sawyers and Wood-cutting Machinists, 204; General Smiths' and Fitters' Trade Union, 200; United Builders' Labourers' Union, 1,650; General Labourers' Amalgamated Union, 2,400; Navvies' and Bricklayers' Labourers' Union, 1,650; United Order of General Labourers, 900; Gasworkers' Union (Building Trades Section), 840; and Amalgamated Plumbers' Mates' Society, 372. The total number of men involved in these and a few smaller unions amounts to 31,411, but there are a number of men, especially amongst the labourers, who are not enrolled in any trade organisation, and a general strike throughout the London building trades would, it is stated, involve 50,000 men, though it is not likely that more than two or three thousand men will be affected at first.

HARTLEPOOLS' BUILDING TRADES.—Notice has just been given by the joiners employed in the building trade in the Hartlepools for an increase of ½d. per hour, and for certain alterations in the conditions of labour. The building trade is exceptionally brisk in the Hartlepools just now, and it is not unlikely that other departments of the trade will shortly seek an advance. The notice issued by the joiners will run three months, and in the meantime efforts will be made to arrive at a settlement.

STRIKE OF JOINERS, SUNDERLAND. — The majority of the house joiners at Sunderland have come out on strike. The men ask for an advance of ½d. per hour, from 8½d. to 9d. Several firms have acceded to the request, but men connected with the Joiners' Society have stopped work until the advance is granted all round.

LEGAL.

A BRADFORD LIGHT AND AIR CASE.

THE case of Woodhead *v.* McDonough was again mentioned on the 17th inst. to Mr. Justice North, in the Chancery Division, it being a motion in which the plaintiffs seek to restrain the defendants by injunction from erecting, or permitting to be erected, buildings at the premises, the "Sir Robert Peel" public-house, Bradford, so as to darken, injure, or obstruct any ancient lights enjoyed by the plaintiffs. The case was reported in the issue of the *Builder* for April 4 last.

Mr. Vernon Smith, Q.C., who appeared for the plaintiffs, now said that the defendants' building had been erected, and, as he believed they did not propose to erect higher than the existing building, his clients would be satisfied with that on the defendants undertaking, in accordance with the terms of a letter of April 2, to that effect.

Mr. Swinfen Eady, Q.C., on behalf of the defendants, agreed to this, and

His Lordship accordingly allowed the motion to stand for trial on the defendants undertaking in accordance with the terms of the letter.

POINT UNDER THE METROPOLIS LOCAL MANAGEMENT ACT, 1855, AND THE METROPOLIS MANAGEMENT ACT, 1862:

CASE IN THE DIVISIONAL COURT.

IN the Queen's Bench Division, on the 18th inst., Mr. Justice Hawkins and Mr. Justice Vaughan Williams delivered a considered judgment in the case of White *v.* the Vestry of Fulham, it being an appeal from the decision of a magistrate to enforce an assessment upon owners of property in respect of the paving of a new street.

It appeared that the new street in question was known as St. Thomas's-road, in the parish of Fulham, in which, on the northern side, there were about thirty small houses, two of which were owned by the appellant. In 1870 the Vestry resolved to pave the thoroughfare as a new street, and they assessed the owners of the houses on the northern side in respect of the cost. In 1888 the owner of a boundary fence on the southern side of the street offered to put back his fence 13 ft., this offer being accepted, 6 ft. being added to the roadway, and 7 ft. reserved for a footpath.

The Vestry resolved again to treat St. Thomas's-road as a new street, in reference to this addition to the width of the street, and the paving of it; and they assessed the owners of the houses on the other side of the road to contribute to the cost of paving, though their houses did not abut upon the new part. The appellant, refusing to pay the assessment, which amounted to 7*l.* 4s. 6d., the magistrate ordered that he should pay, and it was this decision which was now appealed against. The proceedings were governed by Section 105 of the Metropolis Local Management Act, 1855 (18 and 19 Vic., cap. 120), and Section 77 of the Metropolis Management Act, 1862 (26 and 27 Vic., cap. 102).

Their Lordships held that the Vestry was absolutely without jurisdiction to resolve a second time to treat the whole of St. Thomas's-road as a new street in respect of the addition to its width upon the southern side of its thoroughfare, and gave judgment for the appellant with costs.

Mr. Edmondson appeared as counsel for the appellant; and Mr. Channell, Q.C., and Mr. Mac Kaskie for the Vestry.

THE FINALITY OF AN ARCHITECT'S CERTIFICATE:

IMPORTANT CASE IN THE QUEEN'S BENCH DIVISION.

THE case of Lorden & Son *v.* Pryce and others, on the 20th inst. came before the Divisional Court of Queen's Bench, consisting of Baron Pollock and Mr. Justice Day, it being the plaintiffs' appeal from a judgment of Mr. Verey, the Official Referee.

Mr. Scott appeared as counsel for the appellants, and Mr. Willes-Chitty for the respondents.

It appeared from the statement of Mr. Scott that the plaintiffs were builders, and the defendants a committee of gentlemen representing a religious body who employed the plaintiffs to build a chapel at Wimbledon, the contract entered into being dated November 25, 1894. The contract sum for doing the work was 3,688*l.*, the contract being in the usual form, and containing the usual stipulations. The builders commenced to do the work, and amongst other things in the contract they had to provide additional sums for certain classes of work, amongst others being a sum of 160*l.* for heating and gas-fittings. In the autumn of 1895 some question arose as to who should pay the sub-contractors the amount of work they were employed to do by the plaintiffs, and it was ultimately arranged that 120*l.* should be taken out of the 3,688*l.*, the defendants paying that direct to the sub-contractors, so that it reduced the amount due to the plaintiffs to 3,568*l.* The plaintiffs were paid during the progress of the work, and before the final certificate of the architect the sum of 3,600*l.*, and they claimed in the action the sum of 133*l.* 8s. 2d. beyond that as per the architect's certificate of August 25, 1895, and the point at issue was whether the architects' certificate was binding on the defendants or not.

Baron Pollock: That makes it more.

Mr. Scott replied that the plaintiffs were claiming for extra work besides. The learned counsel said that he contended that, under the terms of the contract, the architect's certificate was final in the absence of fraud, but the learned official Referee took a different view.

Mr. Baron Pollock, without calling upon the counsel for the respondents, in giving judgment, said that the case no doubt involved a question of great practical importance, because it dealt with the construction of a contract which was of common daily occurrence; but he thought when that had been said that it was as clear as anything could be clear that on the point of law in the present case the Official Referee had come to a correct conclusion. The Referee had to decide whether the allowance which was due to the plaintiffs of 133*l.* 8s. 2d.—the amount charged for extras under the contract in question—was legally due from the defendants. The defendants and the plaintiffs, to his mind, had entered into a contract by which they had clearly defined what was the contract between them and what powers were given to the architect who acted on the part of the defendants. The only power given to the architect was by Clause 2 of the general conditions of the contract, which provided that any question which might arise as to the materials, workmanship, delay, mode of executing the work, interpretation of drawings, quantities, specifications, &c., should be submitted to the architect, "whose certificate given on any point in accordance with the provisions herein shall be final and binding on the contractor without appeal." The learned Judge, continuing, said that clause 18, however, laid down as clearly as possible that if any extras were required the order was to be signed by the treasurer and secretary, and countersigned by the architect, and upon the words contained in those two clauses it seemed to him perfectly clear that the architect had no power whatever, either by way of direction or by way of consent or waiver, in any way to get rid of clause 18. To hold that he could do so would be to say that he could make a new contract for the parties, and set aside the contract already entered into.

Mr. Justice Day concurred, and

The appeal was dismissed with costs.

MEETINGS.

FRIDAY, APRIL 24.

Architectural Association.—Mr. Francis E. Masey on "The Present Position of Architecture at the Royal Academy." 7.30 p.m.

SATURDAY, APRIL 25.

Architectural Association. — Visit to Coburg Hotel, Mount-street. 3 p.m.

St. Paul's Ecclesiological Society.—Visit to St. Paul's Cathedral under the guidance of the Rev. Lewis Gilbertson, M.A. 2.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Inspection and demonstration at the Sewage and Destructor Works, Ealing. 2.15 p.m.

Edinburgh Architectural Association. — Visit to St. Columba's Abbey and Island, Inchcolm.

MONDAY, APRIL 27.

Society of Arts (Cantor Lectures).—Mr. James Swinburne on "Applied Electro-Chemistry." I. 8 p.m.

Surveyors' Institution.—Mr. R. F. Grantham on "Rivers Conservancy and Pollution." 8 p.m.

TUESDAY, APRIL 28.

Institution of Civil Engineers. — Papers to be further discussed— (1) The Thirlmere Works for the Water-Supply of Manchester," by Mr. G. H. Hill; (2) "The Vyrnwy Works for the Water-Supply of Liverpool," by Mr. G. F. Deacon. And, time permitting, Papers to be read—(1) "American and British Methods of Manufacturing Steel Plates," by Mr. Jeremiah Head; (2) "Four American Rolling Mills," by Mr. Samuel T. Wellman. 8 p.m.

Royal Victoria Hall, Waterloo-road.—Professor Vivian B. Lewes, on "Artificial Illumination." 8.30 p.m.

WEDNESDAY, APRIL 29.

Carpenters' Hall, London Wall (Lectures for Foremen in Carpentry and Joinery).—Mr. Thomas Blashill on "Shoring." 8 p.m.

Institution of Mechanical Engineers. — Ordinary General Meeting. 7.30 p.m.

THURSDAY, APRIL 30.

Society of Antiquaries.—8.30 p.m.

Institution of Electrical Engineers.—Mr. W. Langdon on "Railway Telegraphs, with Special Reference to Recent Improvements." 8 p.m.

CONTRACTS AND PUBLIC APPOINTMENTS.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*House, Stabling, &c.	West Sussex Standing Joint Committee	C. Adcock, 5, Queen's-sq. Bognor	April 27
Additions to Science and Art School, Colchester	Committee	H. Woodyear, Boro' Engr. 36, Stanwell-street	April 28
Police Station, &c. Newmarket	West Suffolk C.C.	F. Whitmore, Surv. 17, Duke-street, Chelmsford	do.
Street and Sewers, Queen's Park	Glasgow Corp.	A. R. M'Donald, City Engr. City-chambers	do.
Sewers, &c. (No. 2), Cooper Bridge, Brighouse	,,	A. M. Fowler, C.E. 1, St. Peter's-sq. Manchester	do.
Additions to School, Church-avenue, Downpatrick	,,	J. W. Bassett, C.E. Court House	do.
Additions to Chapel, Pellon, Halifax	,,	M. Hall, Archt. 29, North-gate, Halifax	do.
Additions to School, Heath-street, Crewe	,,	G. E. Bolshaw, Archt. 189, Lord-street, Southport	April 29
Farm Buildings, Monstown Cottage, Logierieve, Aberdeen	,,	Wilsone & Duffus, 146, Union-street, Aberdeen	do.
Engine House, &c. Sewage Disposal Works, Livsey Fields	Bury (Lancs) Oorp.	J. Cartwright, Boro' Engr. Corporation Offices	do.
Two Pairs Cottages, Dinas Powis, Wales	Maj.-Gen. H. H. Lee	W. H. D. Caple, Archt. 1, St. John's-sq. Cardiff	do.
Street Works	Birkenhead Corp.	C. Brownridge, C.E. Town Hall	do.
*Constructing Urinals	Mile End Old Town Vestry	J. M. Knight, Vestry Hall	dc.
Additions to School, Queen's-road, Halifax	,,	M. Hall, Archt, 29, North-gate, Halifax	April 30
Baptist Chapel, Heaton	,,	Thompson & Dunn, Archt. 5, St. Nicholas-buildings, Newcastle-upon-Tyne	do.
House, Rose Bank, Henslingham, Cumberland	,,	Geo. Boyd, Archt. 33, Queen-st. Whitehaven	do.
Additions, &c. St. Mary Church Schools, Keighley	,,	W. & J. B. Bailey, Archt. Bradford	do.
Pair Cottages, Killington, Martinhoe, Devon	,,	G. C. S. Richards, Surv. 6, Castle-st. Barnstaple	do.
Sewers, &c. Overstrand, Cromer	,,	A. F. Scott, Surv. Church-street	do.
Ten Houses, Burton-lane, Monk Bretton, Yorks.	,,	Wade & Turner, Archt. 10, Pitt-street, Barnstaple	do
House, Bratton Fleming, Devon	B. Fanshawe	G. C. S. Richards, Surv. 6, Castle-st. Barnstaple	do.
Brick Reservoirs, Swan-road	Harrogate Corp.	S. Stead, Boro' Surv.	do.
*Girls' School	Whitstable & Seasalter (U.D.) Sch. Bd.	Offices, Whitstable	do.
*General Offices and House	Willans & Robinson, Lim.	T. W. Willard, Archt. Rugby	do.
*New Road	Elm Grove Estate, Barnes	T. & W. Stocker, 90 & 91, Queen-street, E.C.	May 1
Additions to Workhouse, near Dublin	Celbridge (Ireland) Union	L. M'Donnell, 1, Clare-street, Dublin	do.
Granite Road Metal	Ashford (Kent) U.D.C.	W. Terrill, Surv. North-street	do.
*Erection of Sack Stores	M. R. Co.	Co.'s Archt. Cavendish House, Derby	do.
*Painting at Mansfield	do.	do.	do.
Church, Gilfach, Llantrissant, Glam.	Rev. P. Hughes	E. M. Bruce-Vaughan, Archt. 20, St. Mary-st. Cardiff	do.
Roads, Sewers, &c. Llandaff Station, S. Wales	,,	C. T. Evans, Archt. 8, Queen-street, Cardiff	do.
Two Villas, Vineyards Building Estate, Chelmsford	,,	F. Whitmore, Archt. 17, Duke-street, Chelmsford	May 2
*Sinking New Boring in Deep Well	Isle of Wight Union	J. I. Barton, 1, St. Thomas's-street, Ryde	do.
Storage Shed, Sewage Works, Davyhulme	Manchester Corp.	City Surv. Town Hall	do.
Schools, Gladstone-street	Ilkeston Sch. Bd.	C. Hunt, Archt. 36, Station-road	May 4
Street Works	Accrington Corp.	W. J. Newton, C.E. Town Hall	do.
*Boiler House and Chimney Stack	Sheffield United Gas Light Co.	The Engineer, Commercial-st. Sheffield	do.
*Erection of Hoarding	St. Marylebone Guar.	A. S. Snell, 22, Southampton-buildings, W.C.	do.
*Water Vans	Bermondsey Vestry	F. Sumner, Town Hall	do.
*Swedish Deal Wood Paving Blocks	St. Marylebone Vestry	Court House, Marylebone-lane, W.	do.
*Supply of Wood Paving Blocks	Paddington Vestry	Surv. Office, Vestry Hall, Harrow-road	do.
*Thames Ballast, Sand, and Cement	do.	do.	do.
*Supply of Coal Tar	do.	do.	do.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Imbecile Wards, &c. at Workhouse	Isle of Wight Union	J. I. Barton, 1, St. Thomas's-street, Ryde	
*Sewerage Works	Acton District Council	D. J. Ebbetts, 242, High-street, Acton	May
School and House, Capel Isaac	Llandilo Fawr U.D. Sch. Bd.	H. Herbert, Archt. Brynmarlais, Ammanford, R.S.O.	do.
*Granite	Hove U.D.C.	Town Surv. Hove	do.
Storm Water Reservoir and Pipe Laying	Littlehampton (Sussex) U.D.C.	H. Howard, Surv. Town Offices	May
Waterworks	Northallerton R.D.C.	Fairbank & Son, C.E. 7a, Lendal, York	do.
Sunday School, Pudsey, Yorks	Trustees of Littlemoor Chapel	Hodgson & Farrar, Archts. 27, Kirkgate, Bradford	do.
Oil Works, Cutler Heights-lane, Bradford	,,	Empsall & Clarkson, Archts. 55, Tyrrel-st. Bradford	do.
*Erection of Schools	Llanelly Technical School Committee	W. H. D. Caple, 1, St. John's-square, Cardiff	do.
*Wood Paving	Hove U.D.C.	Town Surveyor	do.
*Infirmary at Caterham	Met. Asylums Board	E. T. Hall, 57, Moorgate-street, E.C.	do.
*Main Drainage	Shrewsbury Corp.	J. Taylor, Sons, & Santo Crimp, 27, Gt. George-st. S.W.	May
Leicestershire Road Stone	Ashby U.D.C.	G. H. Lilley, Surv. Town Hall, Ashby-de-la-Zouch	May
*Two Houses and Shops	Bourne Charity Trustees	F. G. S. Shilcock, West-st. Bourne, Lincs.	do.
*Alterations to Farm Buildings	,,	R. P. T. Logan, Francis-street, Dundalk	May
School, Raley-street	Newcastle - on - Tyne Sch. Bd.	W. L. Newcombe, Archt. 89, Pilgrim-street	do.
*Sewerage Works	Wandsworth B. of W.	Offices, East Hill, Wandsworth	May
House, Drangan, near Fethard, Co Tipperary	Rev. C. F. Ryan	W. Doolin, Archt. Dawson chambers, Dublin	May
*Government Offices, Warrington	Com. of H.M. Works	12, Whitehall-place, S.W.	do.
*New Baths, Kensal Town, N.W.	Chelsea Public Baths Commrs.	Harnor & Pinches, 5, John-street, Adelphi, W.C.	do.
Alterations to School, Park-street	Blaenavon (Mon.) Sch. Bd.	Lansdowne & Grigg, Archts. Newport, Mon.	May
*New Infirmary Buildings	Wakefield Union	W. Watson, Barstow-sq. Wakefield	May
Six Houses, Wilkinson-street, Nelson, Lancs.	R. Blackborough	W. & J. Dent, Archt. Railway-street	No date
Congregational Church, Rhos, Ruabon	Rev. R. Roberts	M. J. Gummow, Archt. Wrexham	do.
Shops, Offices, &c. The Parade, Felixstowe	A. Marsh	G. W. Leighton, Archt. 6, Princes-street, Ipswich	do.
Villa, Belle Vue-road, Asbourn	H. T. Drabble	W. Sugden & Son, Archt. Leek, Staffs.	do.
Schools, St. John's, Bilton, Harrogate	,,	A. A. Gibson, Archt. Yorks. Bank-chambers, Harrogate	do.
Additions to Hampsthwaite School, Harrogate	,,	Geo. Bland, Archt. James-street	do.
Alterations, &c. Church, Kirkconnel, N.B.	,,	M'Gibbon & Ross, 65, Frederick-street, Edinburgh	do.
Two Cottages, Russell-street, Peterborough	,,	J. G. Stallebrass, Archt. North-st. Peterborough	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Clerk of Works	Surbiton U.D.C.	3*l.* per week	April
*Clerk of Works	Hammersmith Vestry	3½ Guineas per week	do.
*Architectural Assistant (Junior)	Hull Corporation	60*l.* per annum	April
*Clerk of Works	Bromyard Union	3*l.* per week	May
*Inspector of Sanitary Alterations	Withington U.D.C.	100*l.* to commence	May
*Surveyor	Morgam U.D.C. Port Talbot	130*l.* per annum	May
*Boro' Surveyor and Water Engineer	Blackburn Corporation	700*l.* per annum, Office, Clerks, &c.	May

Those marked with an asterisk (*) are advertised in this Number. ***Contracts, pp.*** iv., vi., viii., & ix. ***Public Appointments, pp.*** xviii. & xxi.

FRIDAY, MAY 1.

Institution of Mechanical Engineers. — Ordinary General Meeting (concluded). 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. Edward S. McDonald on "Swing-Bridge over the River Nene at Sutton Bridge." 8 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

6,032.—STOP TAPS FOR WATER-PIPES.—*W. Dudwell.*—The object of this invention is to construct top-taps to prevent water-pipes from bursting. This the patentee effects by stop-taps fitted with two valves with reverse threads for stopping the supply from companies' main and simultaneously emptying rising main to building. The tap or cock is formed with two valves, the slide of the upper one working by a left-handed thread and that of the lower by a right-handed one.

7,688.—IMPROVED CHIMNEYS.—*G. Barker.*—In place of external hoops and similar metal reinforcements to high chimney stacks for works, &c., patentee places in internal portion of chimney an iron lining, preferably in the form of a tube. Such tubes may be made in short sections, with a flange at each end, so as to render construction easy. If a square flue is required the lining may be square.

9,129.—APPARATUS FOR SECURING SASH POCKET PIECES: *R Leggott.*—In this invention holes are cut through the sash stile at each side at convenient places, with inclined tops and bottoms. The pocket pieces are formed to fit these inclines, and are secured by plates and a spindle and tongue.

10,138.—WASTE PREVENTER FLUSHING CISTERNS: *E. J. Preston.*—This is a waste preventer flushing cistern, fitted with an annular siphon, the inner leg of which is fixed to the bottom of a well below the bottom of the cistern proper, and the outer leg, or cap, of which is provided with a perforated bottom flange, adapted to work freely up and down in the well, actuated by a forked lever engaging with the cap and having its fulcrum on the cistern.

10 699. — INTERMITTENT FLUSHING APPARATUS. — *T. Hargreaves.*—This invention relates to flushing waste water-closets, drains, &c., where intermittent flushing is required, and adopts an automatic "tipper," mounted in a box or chamber with its back to the outlet from the said box or chamber. The back of the latter being cut away at its upper part.

18,292.—DOOR-CLOSING AND CHECKING APPARATUS. —*F. T. Franke.*—This is a door-closing device, having its piston-rod connected by a bell crank with a pull rod, which is variable in length, and whose fixed end is held in an adjustable bearing for the purpose of enabling the door spring to be adjusted to different actions, and also to adapt it to all kinds of bearings. The patentee also claims the application of a bearing plate and a loose cone joint.

20,027.—WINDOW SASHES AND FRAMES: *E. G. Kendall.*—This invention is a development or improvement on the patentee's previous patent, No. 13,810, A.D. 1894. This is intended to permit of sashes being easily reversed for cleaning or ventilating purposes, which is effected by the adoption of dovetail pieces of U section, screwed to the pulley stile, with a recess formed in the sliding portion of the sash.

NEW APPLICATIONS FOR LETTERS PATENT.

APRIL 7.—7,350, J. Macaulay, Chimney Cowls and Fans.—7,356, D. Doyle, Saws.—7,363, T. Pursey, Gas-Burner Fittings.—7,382, D. Wallace, Water-closets.—7,407, C. Grundy, Combined Screw and Nail.—7,413.—A. Rottmann and A. Silver, Decorative Embossing for Panels, Wall Surfaces, &c.

APRIL 8.—7,457, W. Thompson, Moulding or Planing Machines.—7,461, C. Clarke, Window Attachment.—7,465, C. Johnson and S. Parker, Sinking caissons in earth boring and making foundations for buildings, &c.

APRIL 9. — 7,488, G. Vincent, Reversible Sliding Window.—7,495, T. Caunt, Sliding Window Sash Frames. 7,524, A. Southern, Mitre Board.—7,525, W. and J. Cooper, Water Closets.

APRIL 10.—7,579, E. Davies, Kilns.—7,606, A. Stocking, Waste or Slop Water Closets.

APRIL 11.—7,643, A Weil, Machinery for the manufacture of Roofing Tiles.—7,686, J. Polke, Bending Wood.—7,688, J. Polke, Drying and Seasoning Wood, &c.—7,703, L. Viard, Levelling and Surveying Instrument.—7,713, S. Naylor, Windows with Combined Sliding and Swinging Sashes.

PROVISIONAL SPECIFICATIONS ACCEPTED.

734, J. Knight, Preventing the necessity of taking off Side Slips or Parting Beads, or taking out Window Sashes, when renewing Sash Lines.—2,046, S. Bridgwood & Sons, Kilns.—2,726, A. Ransom, Chimneys and Ventilating Shafts.—4,477, F. Trier, Machinery for Working Stone, &c.—4,992, G. Harrison, Dust Bins.—5,040, A. Manners, Hanging Window Sashes to Window Frames.—5,486, The Sandycroft Foundry and Engine Works Company, Ltd., and J. Jones, Augers or Boring Tools.—5,536, W. Geneviève, System of Combined Girders and Flooring.—6,293, J. Sherwin, Die for the Manufacture of Tiles.—6,4[illegible] H. Redgate, Window Fasteners for Windows, &c.—6,536, R. Young, Window Fasteners.—6,613, J. Gram, T-squares.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

8,432, A. Benkwich, Polishing or Glossing Floors.—10,468, A. Roberts, Substitute for Tiles for the Covering of Walls, Ceilings, &c.—3,110, C. Maitland and W. Thomas, Window Sash Fasteners.—4,276, B. Silberstein, Metal Roofing.—5,053, W. Thomson, Water Closet Supply Cisterns, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

April 1.—By RICE BROS.

Westminster.—2 and 4, Champion's-alley, *f.*, r. 57*l.* 4*s.* ..... £[illegible] 110

55, Page-st., u.t. 13¾ yrs., g.r. 7*l.*, r, 36*l.* .....

Clapham.—6 and 8, St. Stephen's-ter., u.t. 67 yrs., g.r. 2*l.* 10*s.*, r. 80*l.* ..... [illegible]

10, 12, and 14, St. Stephen's-ter., u.t. 67 yrs., g.r. 19*l.* 10*s.*, r. 130*l.* ..... 1,[illegible]

By WILLIS & CROUCH.

Edgware-rd.—No. 199, u.t. 24¾ yrs., g.r. 6*l.* 6*s.*, r. 100*l.* ..... 1,[illegible]

Holloway.—1 and 2, St. John's Pk., u.t. 55¼ yrs., g.r. 15*l.*, r. 105*l.* ..... [illegible]

St. John's Pk., i.g.r. 16*l.* 10*s.*, u.t. 55¼ yrs., g.r. 5*l.* ..... 2[illegible]

By N. W. ROBINSON (at Chesham).

Chesham, Bucks.—Quaker-lane, 5 plots of building land, f. ..... [illegible]

By H. R. WILLIS (at Tarvin).

Ashton, Cheshire.—"Holly Bank," f. ..... [illegible]

"Ashton House," and 10 a. 1 r. 20 p., f. ..... 1,[illegible]

"Ashton Hayes Cottage," f. ..... 2[illegible]

By WARNER, SHEPPARD, & WADE (at Melton Mowbray).

Melton Mowbray, Leicester.—Burton-st., a block of stabling, house, and two shops, area 857 yds., f. ..... [illegible]

"Ashfordby House," and 2 a., f. £2,400
By RENTON & RENTON (at Harrogate).
Painal, Yorks.—"Rosehurst," and 9 a. 3 r. 19 p., f. and c. 4,350
By J. H. MCGOWAN (at Dumfries).
Kirkmahoe, Dumfriesshire.—"Kirtonfield Farm," 124 a. 3,000
By W. THOMSON (on the premises).
Jurby, &c., Isle of Man.—"The East Napping Estate," 187 a. 6,120
"The Baflamoar Estate," and 5 Crofts, 501 acres 15,200
April 2.—By R. TOMLINSON & Co.
Gunnersbury.—69, Oxford-rd., u.t. 80 yrs., g.r. 8*l.*, r. 35*l.* 300
By J. WALKER (at Bawtry).
Misson, Notts.—Freehold farmhouse and 169 a. o r. 33 p. 5,075
By TOOTELL & SONS (at Maidstone).
Sutton Valence, Kent. — North-st., "Osborne House," and 8 cottages adjoining, f. 690
April 7.—By E. JACKSON (at Ipswich).
Elmswell (near), Suffolk.—"The Woolpick Brick and Tile Works," containing 145 a., f. 3,200
April 8.—By F. W. HUNTON (at Maidenhead).
Reading, Berks. — Pangbourne-st., a perpetual rent-charge of 10*l.* 250
Bray Common, Berks.—Two cottages and orchard about 9 a., f. 765
Bray, Berks.—Oakley Green, four freehold cottages 345
Maidenhead.—Holyport, "Laurel Cottage," c., r. 30*l.* 500
By J. MARSDEN (on the premises).
Blackpool, Lancs.—"The Theatre Royal" Hotel, restaurant, and shops, f., area 1,417 yds..... 29,000
Messrs. BALLS (at Braintree).
Finchingfield, Essex.—"The Hook Farm," comprising 30 a. 1 r. 15 p., also a cottage, f. 117
April 9.—By CAREY & LEWIS.
Acton.—70 and 72, Osborne-rd., f., r. 42*l.* 18s. 305
By MARK LIELL & SON.
Bow.—13, Stafford-rd., f., r. 33*l.* 16s. 380
Bromley.—198 to 204 (even), Brunswick-rd., u.t. 74 yrs., g.r. 16*l.* 10s. 865
By NEWBON & CO.
Barnsbury.—57 and 59, Cloudesley-rd., u.t. 21 yrs., g.r. 8*l.*, r. 74*l.* 340
Ball's Pond.—41 and 42, Stanley-rd., u.t. 55¼ yrs., g.r. 7*l.* 10s., r. 56*l.* 605
Holloway.—93 and 95, Campbell-rd., u.t. 71 yrs., g.r. 12*l.* 12s. 155
Stoke Newington.—5, Mildmay Pk., f., r. 40*l.* 615
Clapton.—14 and 16, Chippendale-st., f., r. 65*l.* ... 575
Holloway.—67, 69, 71, and 73, Highgate Hill, f., r. 134*l.* 2,620
By STIMSON & SONS.
Limehouse.—21 and 25, Samuel-st., c., r. 41*l.* 12s... 400
32, 34, 54, 56, and 58, Condor-st., c., r. 104*l.* 970
Leytonstone.—505, High-rd., u.t. 56 yrs., g.r. 4*l.*.. 325
Rotherhithe.—Purnell-pl., a plot of building land, f., area 4,500 ft. 300
Dulwich.—23, 25, and 26, Hillsboro'-rd., u.t. 68 yrs., g.r. 22*l.* 10s., r. 114*l.* 960
4, 6, and 8, Thorncombe-rd., u.t. 68 yrs., g.r. 22*l.* 10s., r. 108*l.* 185
1 and 10, Ildersly-grove, u.t. 80½ yrs., g.r. 16*l.*, r. 80*l.* 700
By W. A. BLAKEMORE.
Regent-st.—16, Great Castle-st., u.t. 26 yrs., g.r. 40*l.*, r. 180*l.* 1,820
Cavendish-sq.—25, Margaret-st., u.t. 63¼ yrs., g.r. 18*l.*, r. 230*l.* 2,280
Camden Town.—10, Eversholt-st., u.t. 47 yrs., g.r. 7*l.*, r. 55*l.* 560
Barnsbury.—Half-Moon-cres., f.g.r. 31*l.* 10s., reversion in 22 yrs. 1,315
Highbury.—Avernell-rd., f.g.r. 18*l.*, reversion in 82 yrs. 495
Kilburn.—3, 15, 21, and 23, Priory-pk.-rd., u.t. 69 yrs., g.r. 42*l.* 2s., r. 220*l.* 1,770
42 and 43, St. Julian's-rd., u.t. 69 yrs., g.r. 20*l.*, r. 80*l.* 670
By J. HIBBARD & SONS.
Tottenham.—Tewkesbury-rd., f.g.r. 59*l.* 10s., reversion in 80 yrs. 1,315
Canning Town.—4 to 12, Liverpool-ter., f., r. 290*l.* 3,455
De Beauvoir Town.—Hertford-rd., i.g.r. 72*l.* 4s., u.t. 13¾ yrs., g.r. 17*l.* 525
Wood Green.—Riverpark-rd., i.g.r. 20*l.* 5s., u.t. 70 yrs., g.r. 2*l.* 5s. 300
Holloway.—132 and 134, Tufnell-pk.-rd., u.t. 68 yrs., g.r. 16*l.*, r. 92*l.* 840
Canning Town.—60 to 90 (even), Baron-rd., u.t. 89 yrs., g.r. 67*l.* 4s. 2,030
By WYATT & SON (at Chichester).
Chichester, Sussex.—New Fishbourne, two freehold houses and plot of land, r. 33*l.* 10s. 560
24, Franklin-pl., f., r. 13*l.* 180
7, Orchard-ter., f., r. 12*l.* 11s. 4d. 120
Messrs. BIDWELL (at Ely).
Ely, Cambs.—High-st., freehold business premises and residence, area 5,110 ft. 1,150
Haddenham, Cambs.—Two freehold cottages, r. 10*l.* 160
Welney, Norfolk.—Nine enclosures of wash land, 124 a. 0 r. 26 p., f. 1,605
By W. DEW & SON (at Llandudno).
Deganwy, Carnarvon. — "Bryn Lupus" and 12 a. 1 r. 21 p., f. 3,500
Llandudno, Carnarvon.—5, North Parade, u.t. 63 yrs., g.r. 12*l.* 12s. 2,125
By LEWIS WILLIAMS (at Dolgelly).
Dolgelly, Merioneth.—"The Angel Hotel" and 2 houses, f. 1,925
April 10.—By J. J. DONE.
Cricklewood.—5, Station-villas, u.t. 81 yrs., g.r. 6*l.* 5s., e.r., 45*l.* 450
By A. DARBY & Co. (at Chelmsford).
Springfield, Essex.—A freehold farm, comprising 14 a. 1 r. 13 p. 850
Chelmsford, Essex.—21 and 22, Baddow-rd., and plot of land adjoining, c. 360

***Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent, r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.**

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	8/c/3 0/0/0
Teak, E.I. ..load		11/5/0 16/0/0
Sequoia, U.S.fl.cu		2/2 2/1
Ash, Canada load		3/5/0 4/10/0
Birch, do.		3/10/0 5/5/0
Elm, do.		4/0/3 5/5/0
Fir, Dantsic, &c..		1/10/0 3/0/0
Oak, do.		2/5/0 3/15/0
Canada		6/0/0 7/10/0
Pine, Canada red		0/0/0 0/0/0
Do. Yellow		2/15/0 5/0/0
Lath, Dantsic, fath		4/10/5 5/10/0
St. Petersburg..		5/.0 0/10/0
Wainscot, Riga &c., log...		2/5/0 4/10/0
Odessa, crown....		2/5/0 4/10/0
Deals, Finland and ¢ std std	120	7/10/0 9/0/0
Do. 4th & 3rd		7/10/0 8/10/0
Do. Riga		7/10/0 8/12/0
St. Petersburg, 1st yellow....		10/12/0 13/0/0
Do. 2nd yellow		8/10/0 10/10/0
Do. white		8/12/0 12/0/0
Swedish		7/10/0 16/0/0
White Sea		8/10/0 15/10/0
Canada, Pine 1st		23/5/0 23/12/0
Do. do. 2nd		16/0/0 17/0/0
Do. do. 3rd, &c.		8/0/0 10/15/0
Do. Spruce, 1st.		9/..0 10/12/0
Do. do. 3rd and 2nd		7/10/3 8/10/0
New Brunswick		7/0/0 8/0/0
Battens, all kinds		5/0/2 27/0/0
Flooring boards, sq., 1 in. prep. 1st.		0/10/0 0/15/0
Do. 2nd		0/6/6 0/12/0
Other qualities—		0/5/6 0/7/0
Cedar, Cuba, ft.		/4½ /5
Honduras, &c.		/4 /5
Mahogany, Cuba		4 /0
St. Domingo cargo av.		/4 1/3
Mexican, do. do.		/4 /5
Tobasco, do. do.		/5 /7
Honduras, do. ..		/5 /6½
Box, Turkey ton		4/0/0 15/0/0
Rose, Rio		7/0/0 16/0/0
Bahia		6/0/0 15/0/0
Satin, St. Doming		0/0/7 0/1/0

TIMBER *(continued)*.

Satin, Porto Rico	0/0/7	0/1/6
Walnut, Italian ..	0/0/3	0/2/7

METALS.

Iron—Pig, in Scotland .....ton	2/6/11	0/0/0
Bar, Welsh, in London ..... in	5/12/6	5/15/0
Do. do. at works in Wales.....	5/2/6	5/5/0
Do. Staffordshire, in London.....	6/0/0	6/10/0
COPPER—British cake and ingot	49/0/0	49/5/0
Best selected ..	50/0/0	50/5/2
Sheets, strong..	56/0/0	0/0/0
Chili bars	45/6/3	45/11/3
YELLOW METAL lb	0/0/4½	0/0/5¼
LEAD—Pig, Spanish ....ton	10/17/6	10/18/9
English com. brands	11/0/0	11/1/3
Sheet, English 6 lbs. per sq. ft. and upwards ..	12/0/0	0/0/0
Pipe	12/10/0	0/0/0
ZINC—English sheet.....ton	18/0/0	0/0/0
Vieille Montagne	18/5/0	0/0/0
TIN—Straits	59/12/6	60/2/6
Australian.....	60/12/6	61/2/6
English Ingots..	63/0/0	63/10/0
Banca	60/10/0	61/0/0
Billiton	60/5/0	60/7/6

OILS.

Linseed .....ton	18/10/0	19/0/0
Cocoanut, Cochin	26/15/0	27/0/0
Do. Ceylon	23/0/0	0/0/0
Palm, Lagos	20/15/0	1/0/0
Rapeseed, English pale	23/10/0	24/0/0
Do. brown	22/0/0	22/10/0
Cottonseed ref. ..	16/10/0	17/0/0
Oleine.....	19/10/0	20/15/0
Lubricating U.S.	6/6/0	9/0/0
Do. black	4/9/0	6/6/0
TAR—Stockholm barrel	19/6	1/0/0
Archangel.....	0/14/6	0/15/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish lists in which the accepted Tender is below £100, unless in some exceptional cases and for special reasons.]

BAKEWELL (Derbyshire).—For the erection of water supply works, Chelmorton, for the Rural District Council. Mr. Herbert Littlewood, engineer, Bath-street, Bakewell:—

W. H. Porter	£349	0	J. Newsom £313 0
Millington & Co.	345	0	Wispter & Co. 325 0
R. H. Hill	320	0	Groom & Co. 286 0
W. Furness	317	0	F. Roberts, Bakewell*.. 285 18
Blakewell & Co.	313	10	L. Holmes..... 282 10

* Accepted.

BOURNEMOUTH.—Tenders for painting Bournemouth Promenade Pier. Mr. F. W. Lacey, Borough Engineer and Surveyor:—

	With White Lead Paint.	With Calley's Torbay Oxide Paint.
George & Harding ..	£360 5 0	£380 5 0
Dacombe & Son	350 0 0	350 0 0
P. New	345 10 0	355 10 6
Jenkins & Sons	292 10 0	303 10 0
*A. W. Port.....	255 10 0	265 10 0

* Accepted for Calley's Torbay oxide paint.

BOURNEMOUTH. — For making up Lincoln-avenue and Crabton Close-road. Mr. F. W. Lacey, Borough Engineer and Surveyor:—

T. Adams.....	£620	8 9	W. H. Saunders & Co. £323 2 7
S. Saunders.....	377	15 0	G. Troke (accepted).. 309 4 11

BRADFORD (Yorks.).—For the erection of house and shop, &c., Barkerend-road. Mr. G. C. Gamble, architect, Parkinson's Chambers, Market-street, Bradford:—

Masonry.—Jacob Denison, Undercliffe, Bradford ..
Joinery.—H. & A. Thomas, Idle ..
Slating.—James Smithies, Bradford .. } £386
Plumbing.—Wm. Hodgson & Son, Bradford..
Plastering.—Thos. Cordingley & Sons, Bradford ..

BUCKHURST HILL.—For kerbing and paving and erecting fire engine station. Mr. H. Tooley, Surveyor to the Urban District Council:—

Kerbing.

J. Sheean	£772	12 6	W. Wadey £689 0 0
J. Mackay & Co.	763	3 1	G. Wilson..... 672 7 7
J. Jackson	759	1 5	Wm. Griffiths 639 11 0
D. H. Porter	723	0 6	W. & C. French 596 3 8
T. Adams.....	715	13 8	

Tar Paving.

Brunswick Rock Asphaltic Company	£1,522	15 9	W. E. Constable & Co. £678 0 3
W. Wadey..... ..	951	6 10	Asphaltic Limestone Co. 630 11 0
J. Jackson.....	843	18 6	J. Smart..... 629 15 1
D. H. Porter	731	14 5	

A second estimate was received from J. Jackson upon modified specification, £756. 13s. 7d.

Fire Engine Station.

C. S. Foster £244	13	0	H. W. Tavener, Buckhurst Hill £214 0 0

BRIGHTON.—For the erection of Cottesmore Schools, The Drive, Brighton. Messrs. Brown & Barrow, architects:—

		Extra for Terra Cotta.
W. Taylor	£9,600	£200
Potter Bros.	9,570	130
V. P. Fruman	9,124	—
Foster & Dicksee	9,122	70
Longley & Co.	8,749	75
Ashby Bros.	8,600	30
F. Gough & Co.	8,354	30

CARDIGAN.—For the erection of three wrought-iron bridges for the County Council. Mr. Roderick Lloyd, County Surveyor, Tregaron:—

The Eagle Foundry.	£600	0 0	Jesse Telaesley £342 0 0
The Horsehay Co....	460	0 0	J. O. Brettell, Esq.... 329 6 9
Edward Finch & Co..	447	0 0	A. J. Ellis..... 324 1 3
Richard Nevill & Co.	429	0 0	Somervail & Co..... 310 0 0
Dyn, Steel, & Son ..	373	15 0	Joseph Ellis & Co., Central Chepston* 292 1 6
De Bergue & Co., Limited.....	351	0 0	Francis, Morton & Co. 245 5 0
Lloyd & Co.	344	0 0	Somervail & Co..... 218 0 0

* Accepted.

GRAYS (Essex).—For house at Grays, Essex, for Mr. G. H. Silverwood, M.A. Mr. Christopher M. Shiner, architect, 2, Walbrook, E.C.:—

J. Lawrence	£585		H. J. Carter £403
J. Brown	513		H. R. Rons 4 8

GRAYS (Essex).—For drainage of "Duvals," Meeson's Lane, Grays, Essex, for Messrs. Charlton & Meeson. Mr. Christopher M. Shiner, architect and surveyor, 2, Walbrook:—

H. R. Rons	£327	0	J. Brown £285 15
J. Lawrence	318	15	H. J. Carter 245 0

GRAYS (Essex).—For alterations to No. 1, The Broadway, Grays, Essex, for Mr. T. Hall. Mr. Christopher M. Shiner, architect, 2, Walbrook, E.C.:—

J. Lawrence..... £105. 10s.

GUILDFORD.—For the construction of a small reservoir for the Urban Sanitary Authority. Mr. C. H. Adams, engineer, The Mill, Mill-lane, Guildford:—

A. Johnson	£262		T. Downes £215
R. Smith	249		D. Coker, South-hill* 222

[All of Guildford.]
* Accepted.

HENLEY-ON-THAMES.—For the erection of a block of shops, hotel, and stabling at Henley-on-Thames, for Mr. J. Kendall. Mr. Wm. Theobalds, architect, 26, Budge-row, E.C. Quantities by Messrs. Heelis & Wrightson, 26, Budge-row, E.C.

Stokes	£17,538		Peters & Son £13,577 18
Chinchen	16,000		Lascelles 13,538 0
Bloxham	15,288		Kingerlee 13,328 0
White	14,813		Gibson 12,703 0
Parnell & Son	14,318		Hughes, Wokingham* 12,530 0

* Accepted.

KINGSTON.—For new house, Gloucester-road, Kingston, for Mr. Edmunds. Mr. Christopher M. Shiner, architect, 2, Walbrook, E.C.:—

James Smith & Sons £863			Lane & Son.....£530
W. H. Young	591		

LONDON.—For building new billiard room, &c., at the "Lord Nelson Tavern," Old Kent-road, for Mr. T. Troode. Mr. James Warne, architect, 1, Montpelier-road, Peckham:—

T. White	£749		Spencer & Co. £595
Tigerman	625		King & Son* 585
Simpson & Cove	609		

* Accepted.

LONDON.—For alterations, &c., required to be done at the "Palace Arms" public house, Wilfred-street, Westminster, for Mr. H. Rocke. Mr. Jas. Warne, architect, 1, Montpelier-road, Peckham:—

King & Son	£485	0	Garner & Lovelock* £467 19
Hendrie & Son.....	475	0	

* Accepted.

LONDON.—For residential chambers, Sussex-place, South Kensington, S.W. Mr. W. H. Collbran, architect, 94, Gloucester-road, S.W. Mr. W. H. Strudwick, surveyor, 14, Parliament-street, S.W.:—

Foster & Sons	£15,500		Stephens, Bastow & Co., Limited £13,490
Grover & Sons	14,400		Downes 13,342
Higgs & Hill.....	13,940		Johnston & Co 13,289
Patrick.....	13,800		Woodward & Co 13,000
Stimpson & Son	.....	13,700	Kirk & Randall 12,990
Charters	13,682		Holloway..... 12,800
Laurence & Son	13,500		Patman & Fotheringham 12,663
Martin & Wells.....	13,499		Rider & Sons 12,345

LONDON.—For alterations to ground-floor, new bars, &c., at the "Admiral Keppel" public-house, Fulham Palace-road, S.W., for Mr. E. Levy. Mr. Albert L. Guy, architect and surveyor, Bedford-row House, W.C.:—

Worsley	£3,200		Courtney & Fairbairn £2,885
Godfrey & Son.....	3,196		Antill & Co., Camden Town*..... 2,800
Todd	3,140		
Lascelles	3,075		

* Accepted.

Pewterer.

W. Paddon, 3, Crondall-street, New North-road..£169 0 0

Gasfitter.

G. R. Dix, 115 and 124, St. John's-street-road, Clerkenwell £225 0 0

LONDON.—For sundry alterations at the "Newcastle Arms" public-house, Hercules-road, Westminster Bridge-road, for Mr. Thomas Bracey. Mr. Albert L. Guy, architect and surveyor, Bedford-row House, W.C.:—

Godfrey & Son.....	£597	0	Young*.....£486 10
Courtney & Fairbairn ..	575	0	Geo. Simmonds & Son .. 470 10
Pritchard & Renwick ..	564	0	

* Accepted.

LONDON.—Accepted for sundry repairs at "The Pilot" public house, East Greenwich, for Messrs. Whitbread & Co., Ltd., Chiswell-street, E.C. Mr. Albert L. Guy, architect and surveyor, Bedford-row House, W.C.:—

Ernest Mills, Westcombe Park £233

LONDON.—For the building of chimney-shaft on ground in Molesworth-street, Lewisham, belonging to the Lewisham Board of Works, for Mr. Samuel Willoughby's dust destructor. Mr. Albert L. Guy, architect and surveyor, Bedford-row House, W.C.:—

Shurmur	£793		Geo. Simmonds & Son,
Gerrard.....	767		Pepys-road, New Cross*..£749

* Accepted subject to revision.

LONDON.—For making up private streets, for the Hornsey District Council. Mr. E. J. Lovegrove, Engineer and Surveyor:—

	Mount View-road. (3rd Section.)	Mayfield-road. (1st Section.)	Denton-road. (1st Section.)	Mattison-road. (1st Section.)	Stapleton Hall-road. (3rd Section.)	Elyne-road.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
T. Adams, Wood Green	998 19 7*	1,095 6 8	1,101 5 3	944 3 11	998 8 6*	631 18 5*
J. Bloomfield	1,113 6 4	1,163 4 0	1,162 12 1	989 0 8	1,077 11 6	673 10 2
G. Bell	1,109 0 0	1,171 0 0	1,178 0 0	1,020 0 0	1,115 0 0	690 0 0
F. A. Jackson & Sons, Limited	1,061 7 0	1,167 11 0	1,181 3 0	970 7 6	1,102 0 0	667 11 0
S. Hudson	1 233 2 7	1,320 8 1	1,327 6 6	1,185 2 6	1,251 13 11	770 4 5
W. T. Williamson & Sons	1,216 5 2	1,332 15 1	1,363 9 0	1,074 12 0	1,202 0 0	708 0 0
W. Griffiths, Kingsland.....	1,015 14 9	1,086 19 1*	1,094 14 5*	931 1 8*	1,017 7 2	631 3 8

* Accepted.

LONDON.—Accepted for erection of four houses for Mr. Herbert Caught, Acton Green, W. Mr. W. H. B. Walshe, surveyor Chiswick :—
John Jones ..... £678.

LONDON.—For the supply and erection of girders, &c., for the emporary bridge at Vauxhall, for the London County Council :—

Teeside Iron and Engine Company	£16,843 15 6
Thames Ironwoks Company, Limited	16,518 3 7
Phœnix Foundry Company	15,479 10 4
Sir William Arrol	14,897 19 7
A. Handyside & Co., Limited	14,012 7 7
Braithwaite & Kirk	13,917 18 7
Somervail & Co.	13,646 1 10
Cochrane & Co. (supply only)	7,695 18 5
J. Lysaght (supply only)	5,521 8 11

LONDON.—For the supply of road materials for Victoria Park, for the London County Council :—
R. L. & J. Fennings, W. Griffiths, J. Mowlem & Co., J. T. Stubbings & Son, W. Gibb, Benstead & Lake, R. Ballard, Newell & Robson, L. Sommerfeld, A. Manuelle—all at schedule of prices.

LONDON.—Accepted for various alterations and repairs to premises at Hendon and Finchley, for the executors of the late Mr. M. L. C. Cather. Mr. George Hornblower, architect, 20, Fitzroy-street, W. :—

First Series.

N. Lidstone £174 2 10

Second Series.

W. Tout 862 13 9

LONDON.—Accepted for repairs, &c., for Messrs. Marshall Bros., Huntingdon "Midland Arms," and Nos. 1 and 2, Market-place, Hendon, and livery stables. Mr. George Hornblower, architect, 20, Fitzroy-street, W. :—
W. Tout £257 3

LONDON.—For internal alterations and fittings at the "Duke of Edinburgh" public house, Fairfoot-road, Bow, E. Mr. Fred. A. Ashton, architect, 3, Crooked-lane, E.C. :—

W. J. Maddison	£765	W. Watson	£648
Hearle & Farrow	750	J. & H. Cocks*	569
C. Everard	719	* Accepted.	

LONDON.—For alterations to 20, Highbury-crescent, N.W., for Mr. F. Brien. Mr. Christopher M. Shiner, architect, 2, Walbrook, E.C. :—
House.—Wm. Vanstone .... £303 | *Stabling.*—Wm. Vanstone .. £310

LONDON.—Accepted for erection of store office, &c., at 5, Old Compton-street, for Mr. E. Robinson. Mr. J. Scott, architect, 27, Brunswick-square, W.C. :—
T. Nicholson, 47, Old Compton-street £160

LONDON.—Accepted for repairs, painting, &c., at the Borough Polytechnic, Borough-road, S.E., for the Governors. Mr. Rowland Plumbe, architect, 13, Fitzroy-square, W. :—
T. Nicholson, 47, Old Compton-street £165

LONDON.—For new painting room, Murphy-street, Lambeth, S.E., for Mr. Walter Hann. Mr. W. E. Davis, architect, Falcon-court, 32, Fleet-street, E.C. :—

Holloway Bros.	£1,940	Smith & Sons	£1,573
Johnson & Co., Limited	1,775	Beer & Gash	1,563
Spiers & Son	1,670	Courtney & Fairburn	1,551
Carmichael	1,620		

LONDON.—For a new section-house at Albany-street, for the Receiver for the Metropolitan Police District. Mr. J. Dixon Butler, architect. Quantities by Mr. W. H. Thurgood :—

Grover	£6,762	Ansell	£6,665
Holloway Bros.	6,750	Higgs & Hill	6,634
Perry	6,725	Lathey Bros.	6,497
Scrivenor	6,690	Messum	6,477
Lawrence	6,667	Chessum	6,439
Richardson	6,667	Willmott	6,284

LONDON.—For repairs and reinstatements to the Church of St. Mildred, Bread-street. Mr. C. Innes, architect, 27, Queen-street, City :—

Mansfield & Son	£804	Prestige & Co.	£728
E. Lawrance & Sons	783	Dove Brothers	685
Colls & Sons	775	Balaam Brothers	683

LONDON. — For repairs and decorations at West-square Orphanage, S.E. :—

Higgs & Hill	£166 0	W. Vanstone, Strand*	£133 10
King & Son	135 0	* Accepted.	

LONDON.—For the erection of a school building and appurtenances at Earlsmead, Page Green, Tottenham, for the Tottenham School Board. Mr. C. Bell, architect, 3, Salter's Hall-court, Cannon-street, E.C. :—

Dearing & Son	£17,150	P. Hart	£14,492
Chessum & Son	16,872	Coxhead	14,259
J. Anley	15,990	C. Wall	13,589
Gibson	15,490	Kerridge & Shaw	13,560
A. Porter	15,241	Knight & Son, Tottenham*	12,975
Nightingale	14,980	F. & H. F. Higgs (withdrawn)	11,016
Gray & Hill	14,900	* Accepted.	
Battley, Sons, & Holness	14,699		
Gregar & Son	14,519		

LONDON.—For wrought-iron railings and gates at the St. Marylebone Cemetery, East Finchley, N.W. Mr. A. Saxon Snell, architect. Quantities by Messrs. Northcroft, Son & Neighbour :—

Potter & Sons	£1,240 0	Berry & Sons	£895 0
Lindsay & Co.	988 10	Young & Co.	883 10
The Horseley Co.	896 0		

LONDON.—For boundary-wall, &c., at the St. Marylebone Cemetery, East Finchley, N.W. Mr. A. Saxon Snell, architect. Quantities by Messrs. Northcroft, Son, & Neighbour :—

McCormick & Sons	£4,567	Charles Wall	£4,273
Stanley G. Bird	4,423	Cowley & Drake	4,250
J. Simpson & Son	4,346	H. Wall & Co., Kentish Town, N.W.*	4,087
Leslie & Co., Limited	4,332	* Accepted.	
Patman & Fotheringham	4,309		

NORWICH.—For making-up Lower Clarence-road. Mr. Arthur E. Collins, City Engineer, Norwich :—

A. C. W. Hobman & Co.	£1,133 0 0	W. J. Botterill	£952 0 0
J. S. Smith	1,099 5 10	G. Rackham, Colchester*	893 0 0
W. A. Read	1,050 0 0	* Recommended for acceptance.	

NORWICH.—For making-up Lower Clarence-road, for the Norwich Corporation. Mr. A. E. Collins, C.E., City Engineer, Guildhall, Norwich :—

A. C. W. Hobman & Co.	£1,133 0 0	W. J. Botterill	£952 0 0
J. S. Smith	1,099 5 10	G. Rackham, Colchester*	893 0 0
W. A. Read	1,050 0 0	* Recommended for acceptance.	

PAIGNTON.—For the erection of dwelling-house and business premises at Polsham Cross, for Mr. Thos. Davey. Messrs. Norman G. Bridgman & Walter H. Bridgman, architects, of Torquay, Paignton, and Teignmouth. Quantities by Mr. Vincent Cattermole Brown, of Paignton :—

R. Harris	£1,020 0 0	G. & F. R. Timewell	£908 17 6
E. Westlake	970 0 0	Hy. Webber & Son*	880 0 0
H. P. Rabbich	951 0 0	* Accepted.	
G. Webber & Maunder	908 18 0		

PENRITH (Cumberland).—For the erection of an oblique bridge, Millhouse, for the Rural District Council :—

James McKay	£1,397 9 10	W. Dixon, Boot, Carnforth*	£776 10 6
L. H. Moorsom & Co.	1,058 15 10	* Accepted.	

PORTMADOC (Wales).—Accepted for the erection of chapels. Messrs. Owen, Morris, Roberts, & Son, architects, Portmadoc :—

Dyffryn Merioneth Baptist Chapel.

J. Thomas, Parry, & Co., Llanbeder, Merionethshire £400

Garth C. M. Chapel, Portmadoc, Carnarvonshire.

Roberts, Owen, Williams, & Pwllis, Portmadoc 3 860

Llangefin, Anglesea, Rev. J. Elias C. M. Memorial Chapel.

R. & J. Williams, Upper Bangor, Carnarvonshire 3.565

Llandrindod Wells, C. M. Hall, Radnorshire.

Evan Henry Williams, Llanbyrmmair, Mont. 1,400

RISHTON (Lancs.).—Accepted for flagging the south side of Hermitage-steeet, for the Urban District Council. Mr. John Parker, Surveyor :—
R. Seed & Sons, Blackburn ..... As per schedule of prices.

RUGBY.—Accepted for the supply of granite for the current year, for the Rural District Council :—
Ireland & Knight, Mancetter Granite Quarries, Atherstone. Prices as per schedule to tender.

STOCKPORT.—For the erection of police parade room, Castle-yard, for the Watch Committee. Mr. John Atkinson, C.E., St. Peter's-gate, Stockport :—

J. & J. Lee	£1,805 6 4	W. C. Broadhurst & Co.	£1,550 0 0
Thos. Hoe	1,688 8 8	T. & W. Meadows	1,538 0 0
Wm. Pownall	1,658 4 7	Josiah Briggs*	1,534 0 0
Daniel Eadie	1,626 0 0	* Accepted.	
Denis Mullaney	1,620 0 0	[All of Stockport.]	

WALTHAMSTOW.—Accepted for the erection of house, dairy, and cow-house at Hoe-street, Walthamstow, for Mr. W. Sweetman. Messrs. Kelf & Mullings, architects, Hoe-street, Walthamstow, Essex :—
W. Lane £800

WALTHAMSTOW.—For the erection of villa residence, for Mr. W. Watson. Messrs. Kelf & Mullings, architects, Walthamstow :—
J. R. Smith ..... £320 | W. Burdock (accepted) £277

WALTHAMSTOW.—Accepted for the erection of two villa residences on the Claremont Estate, Hoe-street, Walthamstow, for Mr. A. Moss. Messrs. Kelf & Mullings, architects, Walthamstow :—
Dartnall Bros., Leytonstone £550

WALTHAMSTOW.—For alterations, and putting in new shop fronts to 42 and 44, High-street, Walthamstow, for Mr. W. R. Pettitt. Messrs. Kelf & Mullings, architects, Walthamstow :—
W. Burdock £160
Bosley, Son, & Rippin, Walthamstow (accepted) 112

WREXHAM.—For laying sewers in Brynycabanan-road and Bennion-road, for the Urban Authority. Mr. J. W. M. Smith, Borough Surveyor, Wrexham :—

Williams & Wycherly	£545 0 0	Geo. Law	£365 8 0
James Hughes	470 0 0	Davies Bros.	323 16 8
Joseph Stephens	406 0 0	W. Owen, Wrexham*	284 16 0
		* Accepted.	

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A. E. C.—J. J. (Below our limit). W. R. A.—(Amounts should have been stated).—A. L. F. (The point shall have attention).—Tenders for shops, Albert-street, Nottingham (Name and address of sender not given).

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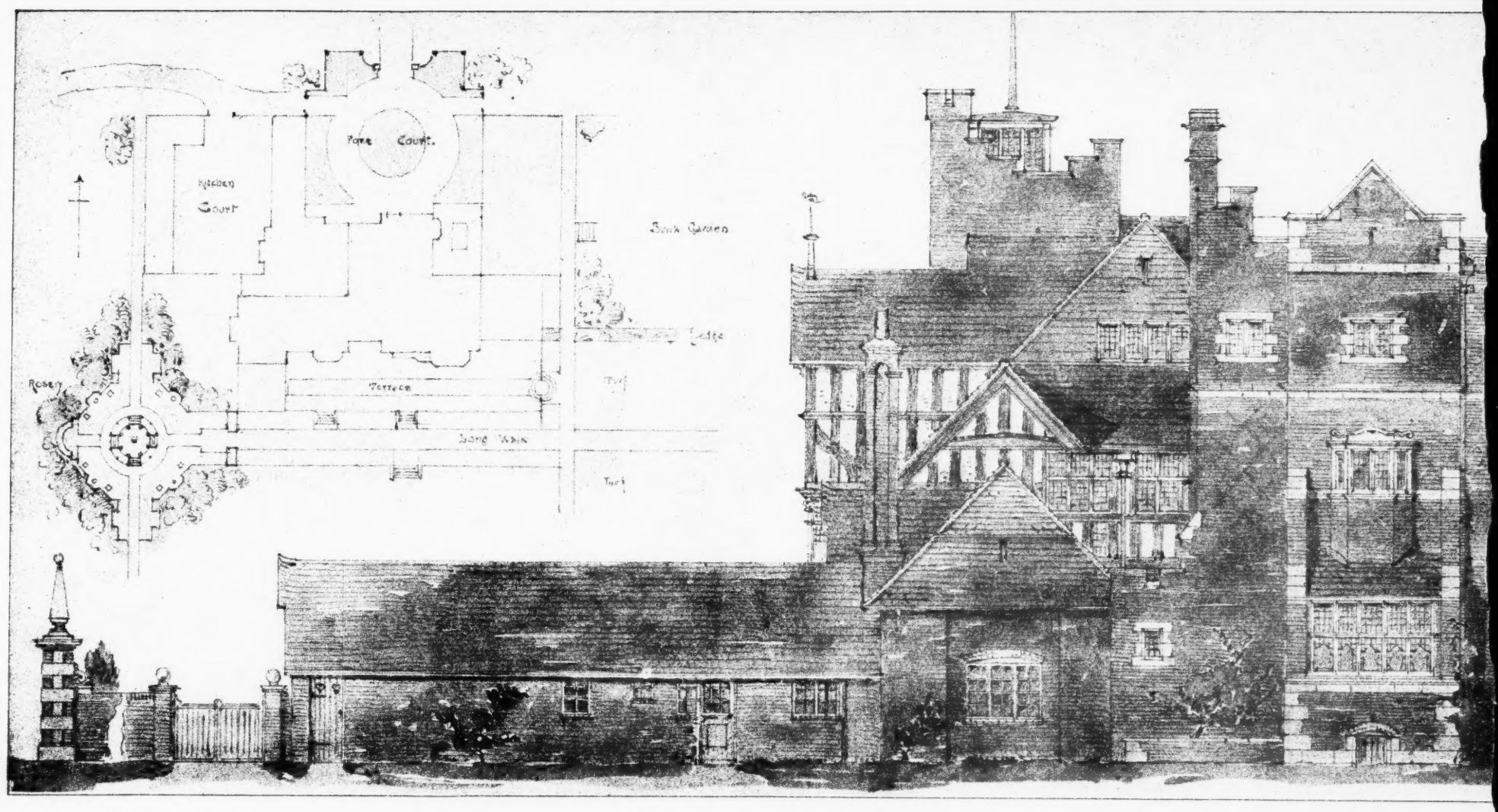

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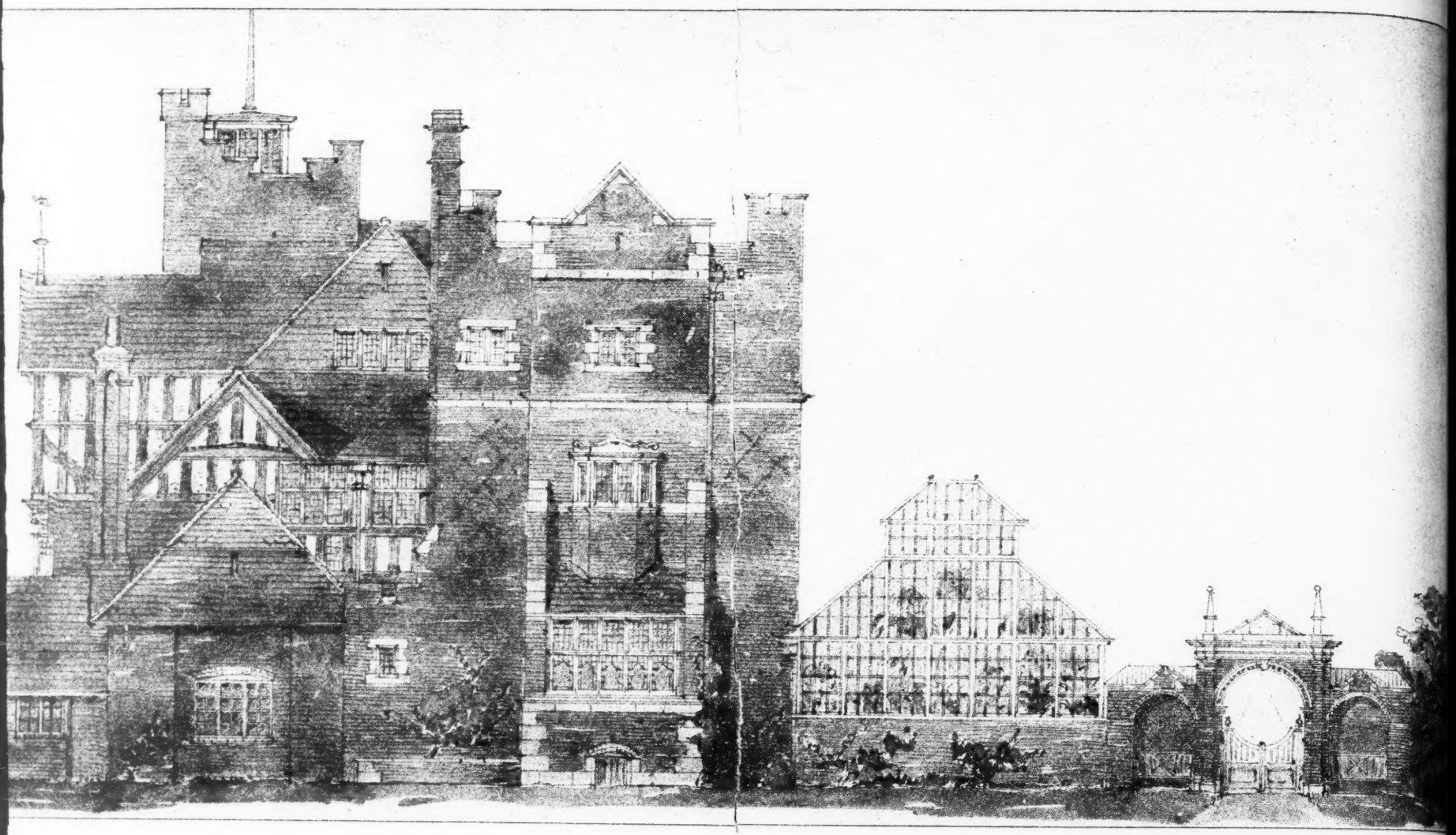

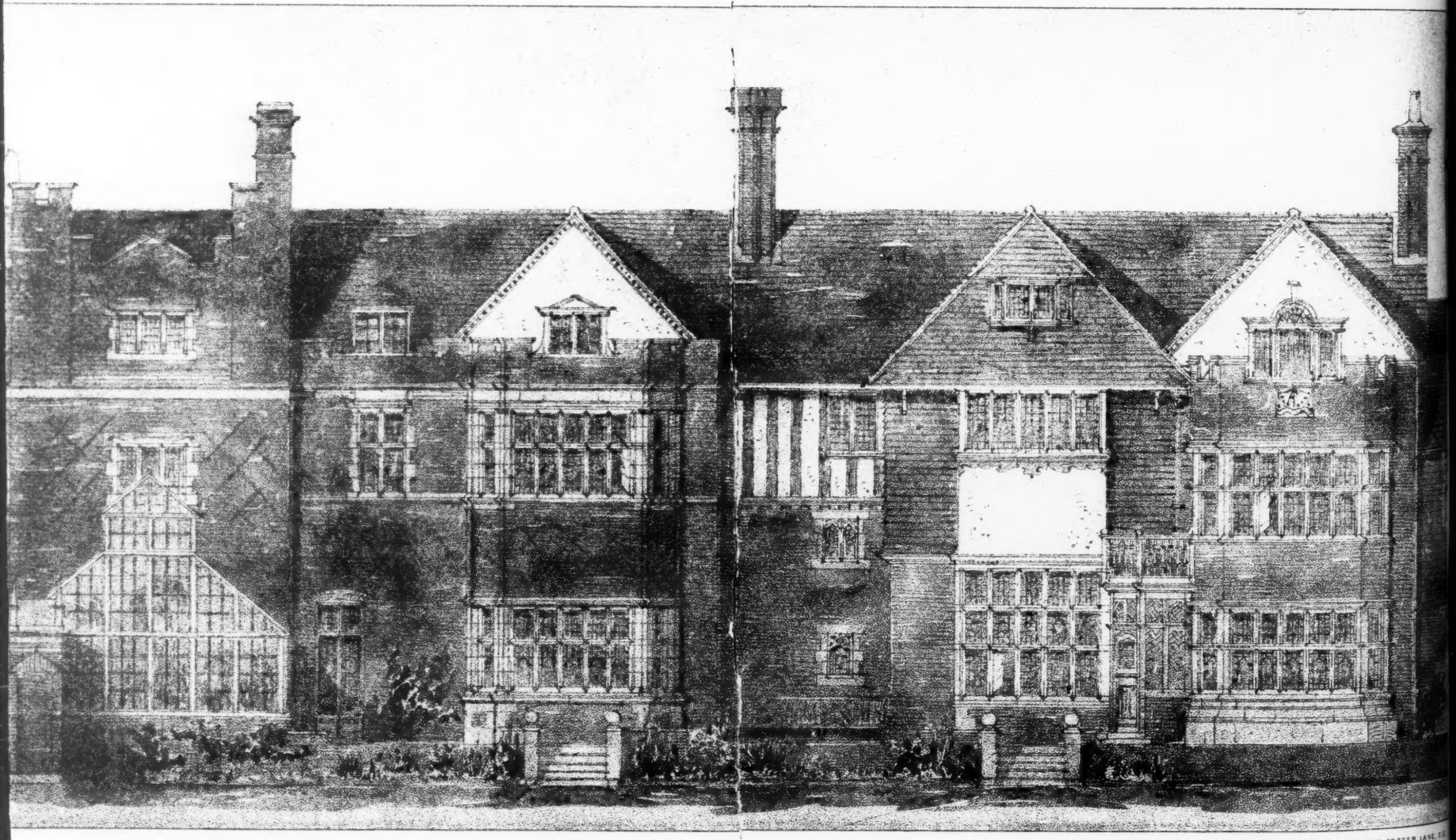

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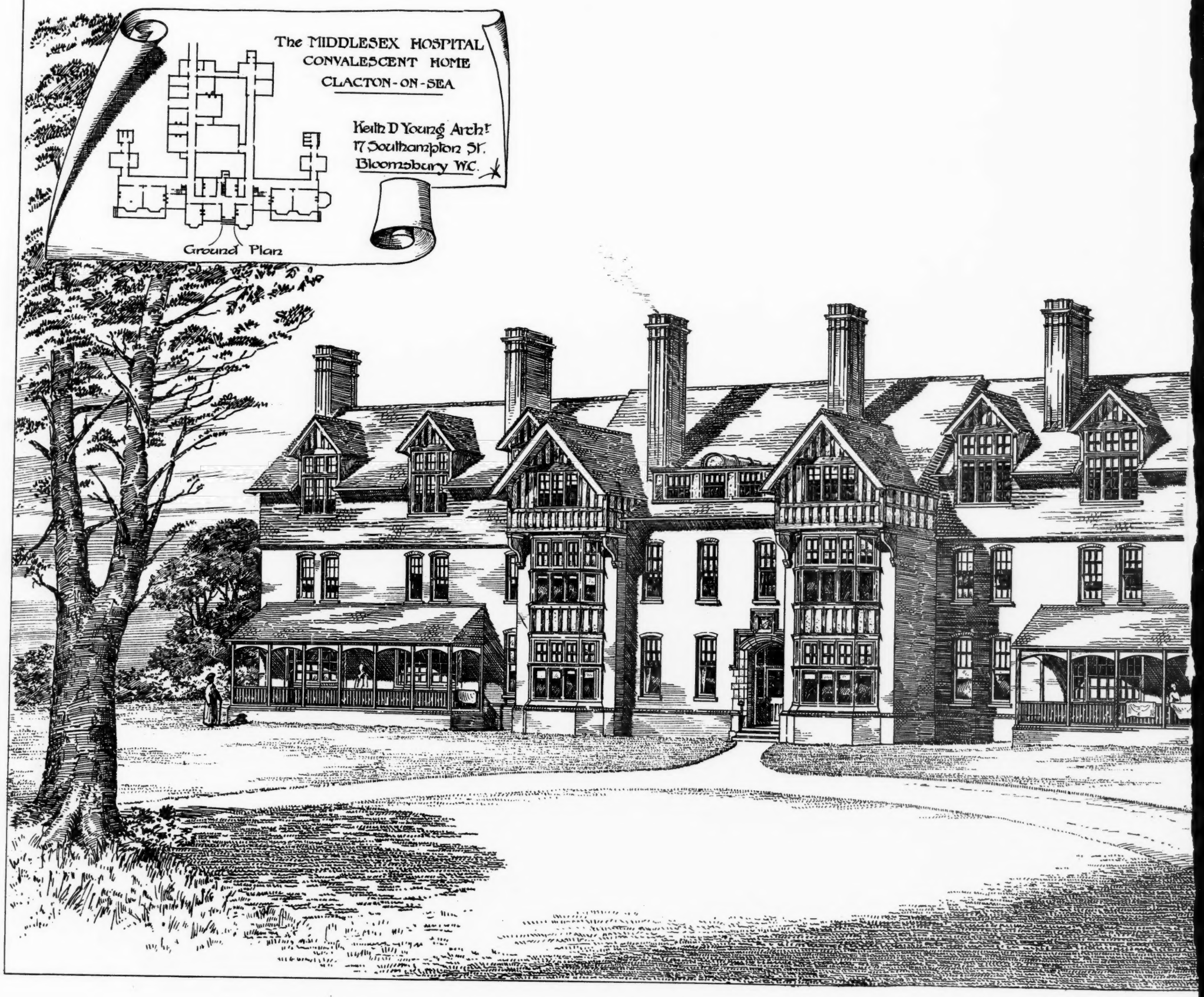
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CONVALESCENT HOME
CLACTON-ON-SEA
Keith D Young Arch.t
17 Southampton St.
Bloomsbury W.C.
Ground Plan

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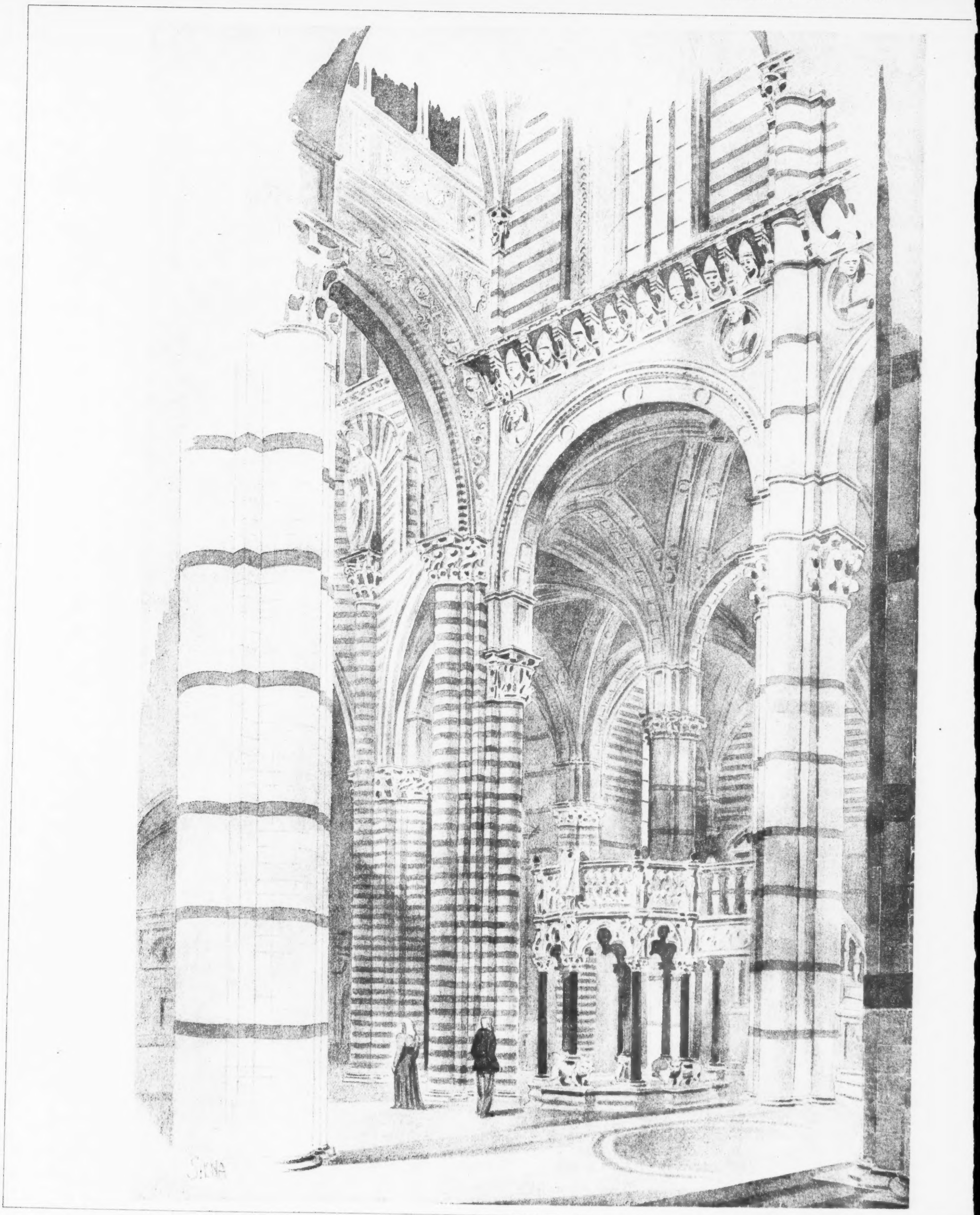
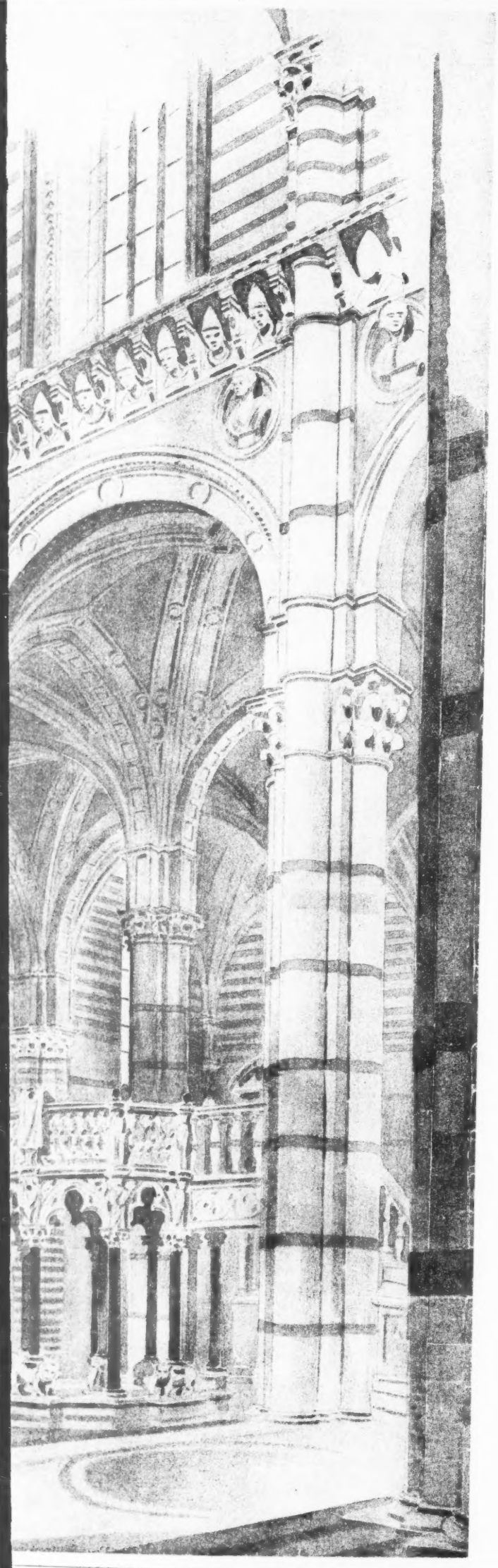
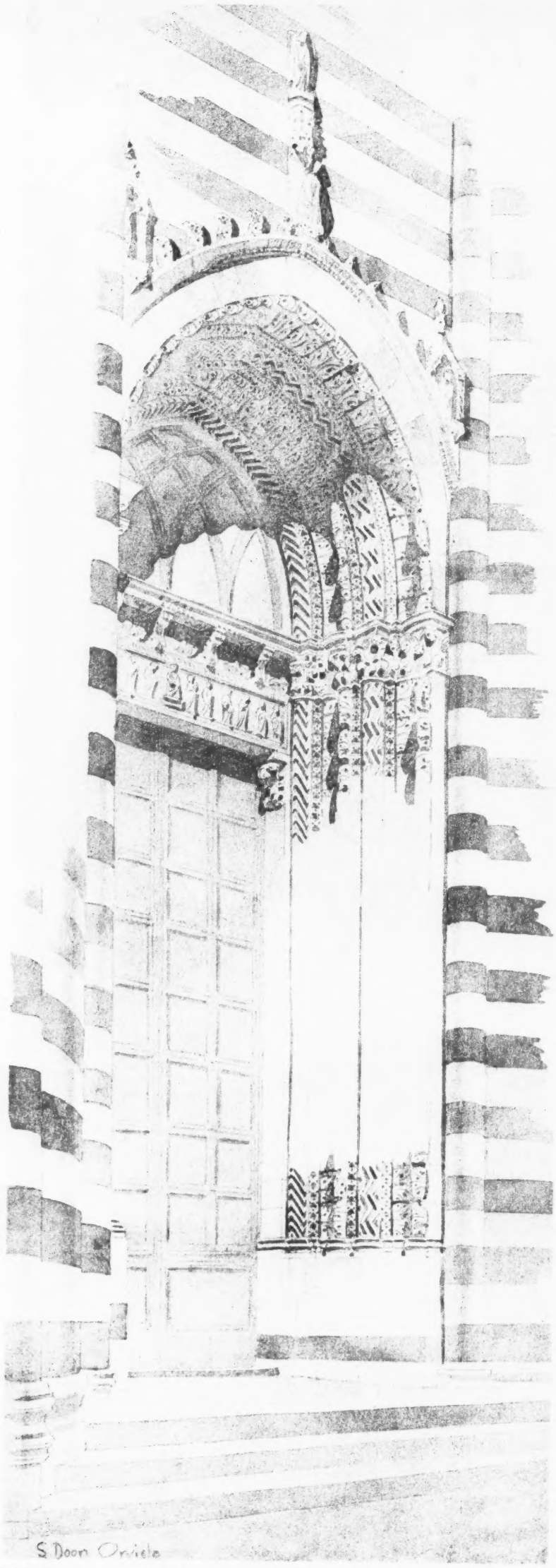


INTERIOR OF SIENA CATHEDRAL, AND SOUTH DOORWAY, ORVIETO CATHEDRAL.—FR





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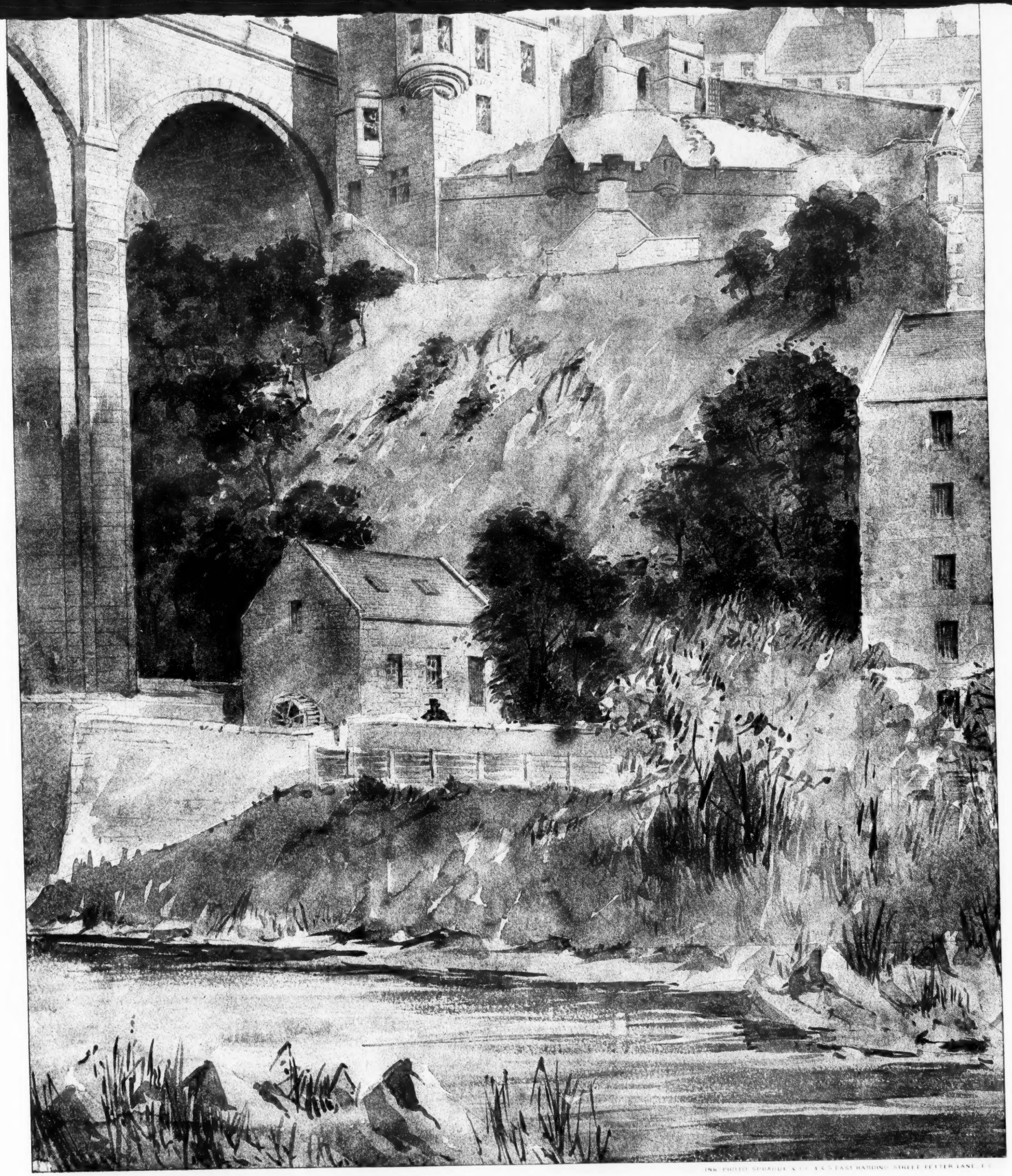

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